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Volume 63, No. 6

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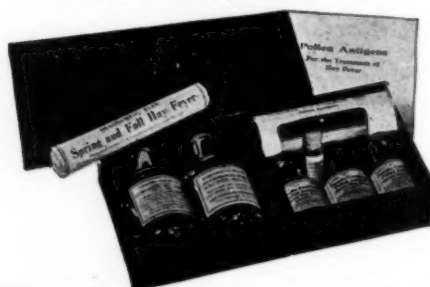
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Medical Times

AND LONG ISLAND MEDICAL JOURNAL
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Therapeutic Indications of Infra-Red Radiation

• Joseph Echtman, M.D., New York, N. Y.

INFRA-RED rays are used, abused, and misused by thousands of practitioners. The simple way of operating the apparatus does not convey to the doctor's mind the possibility that its therapeutic application may not be just so simple, and that some knowledge is required for its proper employment. The writer speaks from his experience with doctors whom he found employing infra-red therapy where they thought it was right, but without right thinking. The latter, however, requires the association of a little knowledge in whatever sphere we wish to apply it. The writer believes that there is not sufficient literature on the subject of infra-red therapy and to his knowledge some articles are not only poorly written, but actually misleading. He, therefore, feels that an occasional short discourse on this subject, giving the result of his personal experience and observation of many years, may be of use to the general practitioner who is interested in the proper application of this therapy. Infra-red rays possess special properties and, as a source of heat, they have their contraindications. Not every ache and pain is benefited by the application of heat; on the contrary, in certain cases or stages of disease, it does harm, as we will see in the following pages.

Special properties of infra-red rays:

1. According to some workers in the physical therapy field, it is believed that infra-red rays possess the property of neutralizing the effect of ultraviolet rays: (a) If, e.g., a part of the body should be radiated simultaneously by both ultraviolet rays and infra-red rays, there will be no ultraviolet erythema. (b) Infra-red rays act as an antidote to ultraviolet erythemas. When a patient receives an over-exposure to the ultraviolet rays and a severe erythema is expected, he could be spared the unpleasantness from the burn if he should be subjected immediately to infra-red radiation for one half hour.

2. Clausen, as quoted by McCollum,^{1, 2} demonstrated a direct influence of infra-red light on growth: "A 10-minute daily exposure to near infra-red radiation (720-1120 mm., total energy value 0.122 gm. cal. min. cm.) from a carbon arc lamp will stimulate growth in young animals . . ."

3. Van Amstel³ states that infra-red rays have

a stimulating influence on the sex hormones. This influence may probably be responsible for the encouraging results gynecologists have obtained from the application of infra-red in some diseases of women.

4. The writer has observed that infra-red rays (radiating heat) have a definitely favorable effect on myositis (but not so on myalgia).

Diseases of the extremities in which infra-red radiation is absolutely contraindicated (but is nevertheless being administered by some practitioners): (1) Raynaud's disease. (2) Thromboangiitis obliterans. (3) Endarteritis obliterans. (4) Erythralgia and (5) Thrombophlebitis. In these diseases of the extremities infra-red or, in fact, radiant heat from any source above body temperature, should never be employed, as serious results, even severe gangrene, have followed its use.

Employment of infra-red radiation in some clinical conditions:

Bursitis. In this condition infra-red and massage may be advantageously employed but one must know the proper time to utilize this treatment. A consideration of the physiology and pathology of the disease in its various stages will serve as a guide for that purpose. Bursitis, like any otheritis, has three stages: acute, subacute and chronic. In the acute stage, the inflammation may exhibit all the three cardinal symptoms: (1) Rubor—Hyperemia. (2) Tumor—formed by the exudate and the various cells. The presence of 1 and 2 is not always noticed in bursitis, but (3) Dolor—is always present. In the subacute stage, fibrous adhesions are forming and contracting, and some muscular atrophy may be noticed. The important pathologic element in the third, or chronic stage, is calcium and fat deposition in the bursa presenting, usually, positive roentgenographic findings. Taking into account the process which takes place in the first stage of bursitis, we realize that heat is logically contraindicated in that stage, as pointed out by Wolfe⁴: "The active hyperemia which has done its duty must not be further increased, as it would be by heat. . ." Our experience in hundreds of cases of bursitis has shown that heat in the acute stage aggravates the pain and prolongs that stage. In the second stage, however, infra-red and massage, according to our experience, are the most ideal treatments; though in our clinic ionization is used in

From the Physical Therapy Clinic of the Mount Sinai Hospital, Service of Dr. Heinrich F. Wolf.

some cases in this stage. In the third, or chronic stage, especially where there are positive roentgenographic findings, infra-red and massage are of only limited value.

Arthritis. In discussing the application of infra-red therapy in arthritis one must be specific as to the varieties in which this treatment is applicable. For instance, infra-red radiation is absolutely contraindicated in arthritis caused by the *Bacillus tuberculosis*. The varieties of arthritis in which infra-red therapy is indicated are: Gonorrheal, Traumatic and Rheumatic. In G-C arthritis infra-red is of good service in all its stages, acute, sub-acute, and chronic (Diathermy is here of course superior to infra-red). In traumatic arthritis, infra-red may not be of benefit or the patient may feel worse from the heat when applied immediately following the trauma. In the subsequent stages infra-red is, no doubt, of value. In rheumatoid arthritis infra-red therapy or heat in any form is, again, absolutely contraindicated in the acute stage. This is in accord with the physiology and pathology of that stage as discussed above. In the subacute stage of rheumatoid arthritis, infra-red and massage are of benefit. In chronic arthritis with changes in the joint as revealed by x-ray, infra-red and massage possess but little value. There are other treatments, such as diathermy or ionization (discussed by the author elsewhere^{5,6}), that accomplish better results in much less time, and the patient is entitled to the best and quickest methods available.

Neuritis and Neuralgia; Myositis and Myalgia. In accordance with our experience, infra-red is of more positive benefit in neuritis than in neuralgia. An interesting parallel regarding the value of infra-red therapy could be drawn between those two conditions and myositis and myalgia. The writer has observed that infra-red rays have a definitely favorable effect on myositis (traumatic and rheumatic), but not so on myalgia. Both myalgia and neuralgia are, not infrequently, more favorably influenced by the high frequency effluve, after infra-red followed by massage, or other forms of treatment, have completely failed to relieve the sufferers.

Fractures. Simple fractures will benefit by radiant heat and massage, which should, therefore, be used to hasten recovery. Severe fractures, accompanied by considerable swelling and pain, are benefited but little by infra-red and massage. The process of recovery is slow and many months are required to get appreciable results. There are more effective methods, such as ionization followed by sinusoidalization, utilized in our clinic in severe fractures with gratifying results.

Backache. In treating numerous cases of backache in our clinic, we have observed that many of those backaches which are due to myositis, mild spondylitis, or mild sacro-iliac disease were usually benefited by infra-red radiation. Chronic spondylitis or sacro-iliac disease, especially with positive x-ray findings, benefited but little from infra-red and were given diathermy. On the other hand, we have encountered a number of backaches (with no definite etiology or pathology) that were benefited neither by infra-red nor by diathermy but by high

frequency effluve. These were in our opinion neuralgic backaches.

Gynecology. Infra-red is of good service in backache which is due to gynecologic conditions. It has also been employed with satisfactory results in other affections belonging to the realm of gynecology. McGuinness⁷ mentions among other treatments the employment of infra-red in backache for which pelvic inflammations are responsible. Van Amstel⁸ treated menorrhagic and metrorrhagic patients successfully with infra-red radiation (and so did McGuinness⁹). He states that a sufficient number of hours of exposure to the rays is, however, necessary to obtain desirable results.

In conclusion, I wish to state that generally speaking, infra-red radiation (radiant heat) should be employed whenever the application of convective* heat in clinical conditions is called for. It may prove to be of better service than radiation from other sources of convective heat (e.g., from 1500-2000 watt bulb), because of its special effect on muscle and certain hormones of the body as mentioned above.

* Convective heat, according to Sampson¹⁰, is "heat from some source not in contact with the body thrown onto the body by radiation."

BIBLIOGRAPHY

1. McCollum, E. V. Principles and Practice of Physical Therapy, Vol. 1, Chap. 10, pp. 3, 17.
2. McCollum & Simonds, Nina. The Newer Knowledge of Nutrition, p. 344, 4th Edition. Macmillan Co., 1929.
3. Van Amstel, H. H. Infra-red in Gynecology, Current Medical Literature Journal A.M.A., Vol. 103, No. 1, P. 80, July 7, 1934.
4. Wolf, H. F. Textbook of Physical Therapy, p. 171, D. Appleton Co., 1933.
5. Echtman, Joseph. Indications and Results of Ionization, Archives of Physical Therapy, X-Ray, Radium—August, 1933, Vol. XIV, pp. 489-491.
6. Echtman, Joseph. Ionization, Medical Record, April 4, 1934.
7. McGuinness, M. C. L. Physical Therapy in Gynecology, Chap. 28, p. 358, in the textbook of Physical Therapy by H. F. Wolf.
8. Mentioned in the same article above quoted.
9. Mentioned in the same article above quoted.
10. Sampson, C. M. Practice of Physiotherapy, p. 42, C. V. Mosby & Co., 1926.

1192 Park Avenue.

Action of Iodine in Thyrotoxicosis, with Especial Reference to Refractoriness

J. H. MEANS and JACOB LERMAN, Boston (*Journal A. M. A.*, March 23, 1935), point out that the clinical facts regarding iodine in thyrotoxicosis are that it produces an altogether characteristic and specific response, which consists in an amelioration of symptoms and a drop in metabolic rate. This response will occur at any stage of the disease. It appears that the response has no relation to the duration or direction of progress of the disease but merely acts as a check on the intensity of its symptoms. These clinical facts are consistent with the theory that in thyrotoxicosis the thyroid allows the escape of thyroxine to proceed at an excessive rate; to leak, in fact, and that the cells of the thyroid hyperfunction in consequence. Iodine, it is suggested, sets up a temporary obstacle to this excessive outflow; it checks the leakage of thyroxine from the gland. The known facts of iodine and thyroxine content of the gland, blood and urine are consistent with such a theory. The authors believe that so-called refractoriness is apparent, not real. Thyrotoxic patients who are unaffected by iodine are those who are already fully iodinated. They doubt the existence of so-called iod-Basedow. The iodine response is valuable in the management of toxic goiter, both in treatment and in diagnosis, but its fundamental nature must be familiar if it is to be used successfully.

Disabled Feet

- Walter Truslow, M.D., F.A.C.S., Consulting Orthopedic Surgeon Brooklyn Hospital, Long Island College Hospital, St. John's Hospital, Norwegian Hospital, Victory Memorial Hospital, and Kingston Avenue Hospital (New York City Department of Health), Brooklyn, N. Y.

"O H, Doctor, my feet hurt something fierce." However expressed, that is the complaint of many men and women and even children today. Foot pain and foot disability are so common that it seems worth while to bring the subject again to the fore. Probably fifty per cent of all the work that comes to an orthopedic surgeon's office is traceable directly or indirectly to feet that are functioning inefficiently.

What are we going to do about it? Adequate care of average foot disability requires:

1. A careful initial estimate of the needs of the patient;
2. Means of meeting immediate pain, often by adhesive plaster strapping;
3. The temporary use of easily raised office-made light insoles;
4. More durable, but not bulky, instrument maker's insoles;
5. An understanding of proper shoes;
6. A faithful follow-through of ten-minute-a-day foot exercises;
7. Gradual withdrawal of the use of the insoles.

Complicated disability requires more than this; but each of these statements, concerning the care of average disability, should be enlarged upon.

1. The consultation visit should note all contributory factors, such as poliomyelitis, infectious arthritis, tuberculosis of bones, rickets, cardiac and renal insufficiency, fractures, dislocations, sprains, and deformities of toes. The doctor must consider the purely static factors—the weight of the patient, habitual time upon the feet, his muscular and exercise habits and the disabling effects on local muscles of illness and of child bearing—all of these factors must be weighed. The examiner should measure and record the amount of pronation of the feet. The use of a height-length index is valuable both in estimating present condition and in guiding the course of treatment. The condition of the plantar and of the metatarsal arches is noted. In general, it may be stated that men suffer more from plantar arch weakness and women from metatarsal arch distortions and pain. This seems to be due to the fact that men usually wear shoes with ample toe room, with low heels and especially with non-rigid plantar supporting shanks; while women use lighter pumps, with rigidly reinforced shanks, and with high heels throwing the weight on the metatarsal arch, where the sudden angle of the sole forces marked and unrelieved extension of the toes, which are also cramped by inadequate room. At

the first visit, the doctor should also estimate the relationship of the foot imbalances and the foot strains to other body imbalances and strains. Many of the cramps of calves and pains of the knees and hips and low backs are directly traceable to foot imbalance and clear up when foot balance is restored.

2. Pain in the feet is the most common symptom which brings the patient to the doctor, although undue tiring and "dragging of the feet" play an important part. Pain should be relieved as soon as possible, and this is generally not difficult. Foot strappings and paddings most quickly relieve pain and give a sense of strength to the part. Fine quality saddler's felting or piano felting should be used for the padding. For an average adult a piece of one-quarter inch felt, about five inches long and two inches wide, is cut into an irregular shape to fit the sole of the foot, from the inner front of the heel to the bases of the three middle toes. This piece is cut straight on the inner edge, curved outward from its rear and forward, to a width of about one inch for the forward projection, which will be placed beneath the heads of the second, third and fourth metatarsal bones. One must clearly understand that any contemplated support for the plantar arch which does not also care for the metatarsal arch is faulty, just as the plantar arch must be supported when the principal symptoms seem to refer to the metatarsal arch. Thus the slightly elevated discs of rubber, of felting or of leather, so often glued to the insoles of the shoe by shoe dealers for metatarsal arch trouble, may give temporary relief from metatarsalgia, but they do it at the expense of the long arch. The pad, having been carefully trimmed, and beveled from a highest point, under the scaphoid bone, backward, outward and forward, is ready to apply to the sole of the foot. It is convenient to place the patient sitting on the side of the examining table, with the limb in a "side-saddle position"—that is, with thigh, knee and leg on the table and the foot free over the edge. The sole of the foot is thus exposed to the operator, who sits opposite the patient. After carefully placing the prepared pad against the sole of the foot, the adhesive plaster is applied in such a manner as (1) to hold the pad in position, and (2) to complete the adhesive plaster "slipper." The word "slipper" is used advisedly. The average case does not require the placing of adhesive plaster above the ankle bones. It should, however, completely encase the heel, the entire shank and should extend forward to the bases of the toes. It should never quite encircle the instep. It is a slipper, except that the toes are free. Only ankle swelling should call for inclusion of the ankle bones, just

as leg swelling and varicose veins will be helped by a few weeks of strapping of the calves and inner and outer sides of the leg. The skin of many persons will not tolerate adhesive strapping for more than about one week. If at the end of the week, the skin has borne it fairly well, but some pain persisting, a second week of strapping (after a thorough bathing of the leg and foot) may be used. This is rarely necessary, however, in uncomplicated weak foot, and the writer deprecates continuing the use of strapping for many weeks, which is sometimes practised.

3. Instead, at the second visit (sometimes at the first, if pain is not severe), temporary insole supports may be made at the office. From careful measurement and tracing of the insole of the shoe and checking up with the sole of the foot, a piece of moderately stiff leather is cut. This carefully follows the insole of the shoe, shaped to fit the heel and the narrowed shank, and widening forward to as far as the bases of the toes. Also one shapes (as with the felt pad described) a piece of sponge rubber or felt. This pad is sewed beneath the leather insole and is placed, for use, in the insole of the shoe. The foot is from time to time raised by adding more sponge rubber or felting—always carefully shaped and beveled—beneath the leather of the temporary insole. This gradual raising, accomplished in about one month, is believed to be the key to efficient and comfortable attainment of the raising of the patient's arch and the remodeling of the sole of the foot, with the readjustment of the intrinsic bones involved. The time necessary to accomplish this varies greatly. In those not heavy and before muscle and ligament tightening have become marked, it may be accomplished in four to six weeks. In the heavy and those with spastic conditions, it will take much longer. But even with them comparative comfort is quickly attained.

4. As some artificial support may be required for perhaps a year, at the second or third visit the doctor measures for the more permanent insole supports. The more accurate the diagrams sent to the instrument maker the better will be the fit of the product he returns. Shall any metal be used in the more permanent insoles? This is simply a question of how much support is necessary. With many women and girls it is not necessary, because the reinforced shanks, now used in most women's pumps, supplies the unyielding base required. If the patient is very heavy, and whether man or woman, some metal—the least that will successfully bridge the shank—should be used; but moderately stiff leather and carefully graded sole contour-formers are the essentials. The instrument maker's insole supports should be so constructed that the doctor may add to them more and more sponge rubber "lifters" as the case requires. Braces with metal heel flanges are to be reserved only for cases with badly abducted heels and with complicated foot deformities.

5. Of course, the question of shoes is important. They must be large enough to avoid cramping of the toes and pressure by the vamp seam; and they must be roomy enough to do this with the slightly increased bulk which the insole adds to the bulk of

the foot. They must be long enough. Many patients are surprised to hear that they should wear shoes longer than they have been accustomed to. "Equal rights for every toe" was an excellent slogan for a certain shoe, unfortunately not now on the market. But there are many makes of shoes today—and good looking and not expensive shoes—which answer reasonable requirements. An effectual instruction about shoes is: "Place the insole support in the shoe considered. See that in placing the shoe on the foot there is ample room for toes and no cramping at the vamp. If such a shoe is too loose at the heel, the heel must be 'taken in' by the shoe dealer." Although the extremes of fashion in shoes are harmful, women and girls should not be subjected to the gaucheries of many "orthopedic" shoes, which they abhor. Instead, it is the duty of their medical adviser so to compensate, by his use of the all-important foot-correcting insole, as to minimize the effects of a shoe not too strictly orthodox.

6. The first need of the patient with deranged feet is *relief of pain*; the second, means of stopping the cause of the pain and the disability by the *restoration of weight balance*. Proper insole supports carefully supervised do this. The doctor's duty, however, is not complete until he has shown the patient how to *restore muscle balance*. This is accomplished by persistent long-time follow through with foot training exercises. The text books and gymnasium instructors give these in a standing position. This is faulty. Pain is too severe and the weight on the feet is too great for them to be performed with accuracy. The patient should be in a sitting position, with the bared feet on the floor (or with a fresh towel beneath). The feet should be parallel and at such a distance apart as to allow a square between them. Both fists should be placed between the knees, side by side, to act as a suggestion not to move the knees, in the first two exercises. The following prescription of ten-minute-a-day exercises has proven valuable:

- | | |
|---|----------|
| A. Raise the inner borders of the feet (ankles out) | 10 times |
| B. Raise the fore part of the feet, turn the toes under, and pivot (on the heels) until the big toes touch each other | 10 times |
| C. Place the feet on a book, on the floor, the toes over the edge of the book. Turn the toes sharply under | 10 times |
| D. Place the right foot (ankle) over the left knee, turn the fore foot and the sole upward and the toes under | 10 times |
| E. Place the left foot (ankle) over the right knee, turn the fore foot and the sole upward and the toes under | 10 times |

To just the extent that the patient will follow through with stated exercises to that extent will he shorten the time necessary for the use of the insole foot supports. To the elderly and to those who are lazy, the exercises are a burden. They may get comfort and fair efficiency, and usually do, by carrying on with the foot bracing only; and

(Concluded on page 187)

Positive Wassermann Reactions In Dermatologic Patients

• Herman Goodman, B.S., M.D., New York, N. Y.

AN estimation of the number of syphilitics in any part of our general population varies according to the type of material studied. Some investigators have found that the prevalence of syphilis in our population varies from five per cent to twenty-five or more. Years ago, a routine Wassermann¹ taken on expectant mothers seeking admission to one of our large maternity hospitals indicated that of 1320 patients, 6.7 per cent gave a four plus Wassermann; and that 2 per cent gave a three plus. These figures show a prevalence of 8.7 per cent syphilitic women. Only one patient of the 1320 gave a history indicating that she had a knowledge of a syphilitic infection. In an examination of almost 1000 prostitutes², I found that 12 per cent of the women had active infectious lesions of syphilis, such as chancres, mucous patches, condylomata lata, and open skin syphilides. On routine blood examination, 42 per cent of the 900 prostitutes (more or less) without skin lesions were found to give a four plus reaction. This indicates a rate of 54 per cent of syphilitic infections among women of this type. At one time, I had the opportunity to study 173 cooks of the Porto Rican Brigade of Infantry³. Thirty-five of these men had four plus Wassermann reactions, indicating that twenty per cent had been infected with the *Spirocheta pallida*.

The variation in the percentage of positive Wassermann reactions led me to become interested in the serologic positive cases on my service at the Stuyvesant Square Hospital, formerly the New York Skin and Cancer Hospital. Our outpatient division (Tuesday, Thursday and Saturday mornings) registers about 5,000 patients each year. The patients report for skin ailments, hence are a more or less selected group. The blood for Wassermann is taken in all patients suspected of having syphilis, or with lesions which are definitely syphilitic. A Wassermann is also taken if there is any doubt as to the clinical diagnosis. It has been the hope of this service to have serologic examinations on all patients as they come to the clinic, but this has been found impractical.

From March 25, 1932, to October 22, 1933, the blood of 1015 patients was examined by the Wassermann technic. Forty-one patients of this group showed the following positive serologic tests:

25 patients with 4 plus Wassermann	
2 " " 3 " "	
1 " " 2 " "	
2 " " 1 " "	
6 " " doubtful "	
5 " " negative "	but a

positive Kline and Kahn or some degree of either a positive Kline or Kahn.

First, consideration will be given to the 27

patients with three and four plus Wassermann. The clinical diagnosis of syphilis was made in 20 patients as follows:

Primary syphilis	1 patient
Primary and secondary	2 "
Secondary	10 "
Tertiary	7 "

Seven patients gave a four plus Wassermann. The clinical diagnosis of syphilis was not made in these cases. Our clinical diagnoses had been:

Scabies	1 patient
Scabies and Herpes	1 patient
Mycotic infection	1 patient
Vitiligo	1 patient
Eczema	1 patient
Drug eruption	1 patient
Pruritus	1 patient

These seven patients are in our opinion the most interesting. We have charted our remarks on this group. No doubt, it would be possible to write many dissertations regarding these seven cases. Of course, every case of syphilis revealed is helpful in the ultimate eradication of the disease. We are in accord with those public-health-minded physicians who recommend that routine serologic examinations be made on every patient coming under the observation of the medical attendant. We have found relatively few serologic positive cases in our series of undiagnosed or unsuspected syphilis among patients presenting themselves for skin lesions. There were 974 patients out of 1015 who gave completely negative serological reports.

We have another interesting group—patients in whom the serologic findings did not support the clinical dermatologic diagnosis of syphilis. One patient diagnosed as tertiary cutaneous syphilis gave a two plus Wassermann; one patient also diagnosed as tertiary syphilis gave a one plus reaction; and a third patient previously treated for syphilis who came in requesting a Wassermann had a negative return. We are aware of the fact that the Wassermann is not the most accurate or sensitive test in late or treated syphilis. Reference to our protocols will indicate the greater sensitivity of the Kline and Kahn tests in such cases.

We have come to another group of patients. This group includes those in whom an indecisive serologic report is rendered and in whom no clinical manifestation of syphilis can be detected on the cutaneous surface. The laboratory reports give two plus, one plus, or doubtful Wassermann reactions, Kline or Kahn tests.

In this group we had only one patient who gave a two plus Wassermann reaction. This patient was mentioned in the preceding paragraph as one diagnosed as previously treated syphilis, without visible lesions.

Two of our patients had a report of one plus. One such patient had been diagnosed as tertiary

From the outpatient skin clinic, Stuyvesant Square Hospital, formerly New York Skin & Cancer Hospital (Mar. 25, 1932—October 22, 1933), Service of Dr. Herman Goodman.

TABLE I

THREE AND FOUR PLUS WASSERMANN IN POSITIVE CLINICAL CASES—TWENTY PATIENTS

No.	Sex	Age	Stage	Date	Serology		Kline	Remarks
					Wass'n	Kahn		
1.	M	37	Primary	9-7 9-12	4+ 3+	Neg 3+	neg 3+	Exposed 4-6 weeks previously. Two ulcers of sulcus. Dark field negative. Clinically typical chancres. No secondaries.
2.	M	46	Primary Secondary	9-2 9-12	4+ 4+	2+ 3+	3+ 3+	Primary of chin. Secondary of palms and soles. Submaxillary and submental nodes enlarged.
3.	M	41	Primary Secondary	8-20	4+			Typical cutaneous secondary. Histology confirms clinical and serologic diagnoses.
4.	M	28	Secondary	6-22	4+	4+	4+	Primary of two months duration. Generalized secondary. Interne diagnosed condition as seborrheic dermatitis.
5.	F	28	Secondary	5-16 5-26	4+ 4+	4+ 4+	4+ 4+	Had sore throat in 1931. Received 15 injections. Treatment with arsphenamine and bismuth gradually reduced serology. 8-24 W. Neg. Kn. 2 Kl. 4.
6.	M	27	Secondary	5-11	4+	4+	4+	Syphilitic alopecia. Mucous patches for three weeks. No sign of primary.
7.	F	45	Secondary	4-15	4+	4+	4+	Papular secondary.
8.	M	23	Secondary	3-2	4+	4+	4+	Primary of lip one month ago. Papular secondary. Condition not previously recognized or suspected by physician consulted.
9.	F	25	Secondary		4+			Chancere of lip. Dark field negative. Distinct papular secondary. Mucous patches. Biopsy reported syphilis. Had attended two hospitals recently.
10.	F	39	Secondary		4+	4+	4+	Husband infected Christmas, 1931. Chancere vulva. May, 1932. Macular secondary June, 1932. Treatment with pills alone. Husband also under treatment.
11.	M	23	Secondary		4+			Lichen planus like secondary. Chancere, Sept., 1931. Did well under treatment. Wassermann reduced to negative (2-17-33). Wassermann taken several times previously had been reported negative. Despite lesions which could be diagnosed clinically no treatment had been given.
12.	M	34	Secondary		4+			
13.	F	27	Secondary		4+			
14.	F	20	Tertiary		4+	4+	4+	Clinical gumma of nose. Test negative one year previously. Taken because felt run down.
15.	F	50	Tertiary	4-8	4+	4+	4+	No relief despite treatment for pain brought patient to us. Worried regarding finances.
16.	M	32	Tertiary	10-6	4+			Chancere in 1925. Treatment with bismuth and arsphenamine reduced serology. 9-5 W. neg. Kn. neg. Kl. 4+
17.	F	30	Tertiary	9-15	4+	4+	4+	Multiple gummas. History of syphilis.
18.	M	48	Tertiary	6-16	4+		4+	Gumma. Diagnosis of psoriasis offered unconfirmed by biopsy report. Son has negative Wassermann. Treatment reduced lesions and serology to negative.
19.	F	59	Tertiary	4-23 5-21	4+ 4+			Clinically suggested erythema annulare centrifuge. Denied knowledge of syphilitic infection. Married at 17 for three years until husband drowned. Married at 25 for 22 years. Husband died of heart disease. Treatment reduced lesions and serology to doubtful (10-24-33).
20.	M	38	Tertiary		4+			Gumma clinically and histologically. Chancere 12 years previously. Gonorrhea several times. Married 10 years. One child. Wassermann wife and daughter negative. Patient revealed central nervous system syphilis by spinal tests.

TABLE II

FOUR PLUS WASSERMANN IN NON-SYPHILITIC CLINICAL CASES—SEVEN PATIENTS

21.	M	30 Scabies	8-23	4+			Typical skin lesions of scabies.
22.	M	33 Scabies Herpes	10-2	4+	4+	4+	Exposed one month previously. Penile ulcer for three weeks. Self treatment and dispensary treatment elsewhere for scabies. Dark field impossible. Clinical diagnosis of chancre could be made after first visit.
23.	M	36 Mycotic infection	8-25	4+	3+		Complained of mouth burning. Microscopic examination for monilia negative.
24.	M	52 Vitiligo	9-14	4+	4+	4+	Clinical vitiligo. History of syphilis—chancre 6 years previously. Denies appearance of secondary lesions. Questionable history of treatment. Loss of pigment in skin since appearance of penile lesion 6 years ago.
			6-1	4+			
			6-16	4+	4+	4+	
25.	F	50 Eczema	8-13	4+			Lichenified eczema much pigmented. Local treatment only. 1 child, 1 miscarriage. Husband died 18 months ago from kidney disease.
			8-27	4+			
			9-3	4+			
26.	F	34 Drug eruption	7-9	4+			Eruption due to phenolphthalein. Also has pityriasis versicolor.
			7-23	4+			
27.	F	57 Pruritus	4-9	4+			No visible lesions. History of syphilis 20 years ago.
			4-26	4+			

INDECISIVE WASSERMANN IN SUSPECTED SYPHILIS—FIVE PATIENTS

28.	M	55 Tertiary	8-12	2+	4+	4+	Syphilis 30 years previously. Intravenous and intraspinal therapy. Wife and son infected and treated. Our serology on both was negative all tests. Tinea found in toe lesions. The ice box Wassermann technic was 3 plus.
29.	M	43 Tertiary	3-10	1+	3+	3+	Multiple gummas, leg, arms, anal cleft. Denied syphilitic infection. Improved under treatment. Left city.
30.	F	40 Desires Wassermann	5-19	neg	neg	neg	Was treated for syphilis in 1925. 24 arm and 10-15 leg injections. Blood and spinal fluid negative.
31.	M	38 Tertiary		±	1+	2+	Serpiginous nodular syphiloderm of scalp, back, chest, etc. Active border and scarring centers. No history of chancre. Married 12 years. 1 child. Improved under treatment with sodium iodide intravenously and mixed treatment by mouth. Referred to Veteran's Bureau for continuation of therapy.
32.	M	29 Eczema	8-20				History of chancre and 20 arm injections.
			9-13	1+	neg	3+	

INDECISIVE WASSERMANN IN NON-SYPHILITIC CLINICAL CASES—NINE PATIENTS

33.	F	22 Furuncle	7-8	1+			Furuncle cleared with local treatment.
34.	F	11 Acne	6-9	±			Papular acne.
			8-2	neg			
35.	F	23 Acne	5-24	±			
36.	F	25 Eczema	5-24	±			
37.	F	24 Eczema	5-24	±			
38.	M	45 Vitiligo	8-22	neg	2+	2+	Depigmented lesions for 10 years on hands, shoulders, and head. History of syphilis in 1927. Wife had negative serology.
			8-26	neg	neg	neg	
39.	F	43 Alopecia	8-5	neg	1+		"Bad blood" in 1925. 2 injections. Drinking man.
			8-12	neg	neg	1+	
40.	M	30 Eczema	8-22	neg	2+	1+	No evidence of syphilis.
			9-1	neg			
41.	F	36 Eczema	8-12	neg	2+		Scaling of scalp—dandruff.

syphilis because of tertiary and serpiginous gummas. The Kahn and Kline were three plus on this patient. The second patient with one plus Wassermann was clinically diagnosed as furuncle. The boil healed with local care.

Six of our patients were reported as doubtful Wassermann. Of these, one was diagnosed clinically as serpiginous nodular syphilis. The Kahn was one plus, and the Kline two plus on this patient. The history was not conclusive, but the lesions healed with mixed treatment and sodium iodide intravenously. Another of the doubtful serology patients gave one plus Wassermann, negative Kahn, and three plus Kline at a subsequent examination. The patient gave a history of chancre and twenty "arm" injections. Our clinical diagnosis had been eczema. Three other doubtful reports were all rendered on the same day. One patient had acne, another lichenification and leucoderma, and the third had eczema. We were inclined to credit the serologic technic that day for these doubtful reactions.

Five of our patients gave a negative Wassermann reaction with some degree of positive in the Kahn or the Kline or both. This group is very interesting because of the claims recently made that the serologic examination for syphilis is incomplete without some more sensitive test than the Wassermann. Contrariwise, some clinicians have come to rely upon the Kline alone. One of these patients is included with those who came in and asked for a Wassermann which was returned negative. Another patient in this group had the clinical appearance of vitiligo. The Wassermann was negative, the Kahn two plus, and the Kline two plus on August 22. Seven days later the three reactions were negative. The serology on his wife was negative. This patient reported a history of syphilis in 1927. Another patient in this group came to us with alopecia, not syphilitic in character. The Wassermann was negative and the Kahn one plus on August 5th. One week later, the Wassermann and Kahn were negative and the Kline (not previously done) was one plus. This patient reported "bad blood" in 1925. One patient with eczema gave a negative Wassermann, two plus Kahn, and one plus Kline on August 22. A week later all these tests were negative. There was no evidence of syphilis. The last patient in this group was diagnosed as seborrheic dermatitis. The Wassermann was negative and the Kahn was two plus. There was no evidence of syphilis.

SUMMARY

We have analysed the reports of about 1000 serological examinations conducted upon outpatients of a large New York City dispensary service for skin afflictions.

Twenty-seven patients had three or four plus Wassermans. Of these, twenty had been clinically diagnosed as syphilis, and seven had not been so diagnosed.

The laboratory returned negative Wassermann reports on two patients in whom the clinical diagnosis of syphilis had been made and could be sustained. Indecisive serological reports were made in

nine cases. Three of these were syphilitic, five non-syphilitic and one a well treated syphilitic.

Two of five patients with a negative Wassermann were historically syphilitic and had some confirmative serology in the guise of indecisive positive Kahn or Kline tests. Contrariwise, three of the patients with negative Wassermann and indecisive Kahn or Kline tests were non-syphilitic, according to history and clinical findings.

CONCLUSIONS:

The incidence of syphilis among patients seeking outpatient care for skin diseases in a large city is about four per cent. Routine serology, to include the Wassermann and one other more delicate test, is indicated for every patient applying for medical aid. The first physician to whom the patient applies should render this service.

The report of indecisive positive serology must be confirmed by history or clinical evidence before being taken as proof positive of syphilitic infection in the patient.

REFERENCES

1. Wassermann Reactions and Miscarriages, Surgery, Gynecology and Obstetrics, 30:368, 1920.
 2. The Prostitute in Jail, Medical Record, 97:483, 1920.
 3. Genital Defects and Venereal Diseases among Porto Rican Draft Troops, J.A.M.A. 72:907, 1919.
- 18 East 89th Street.

Antisocial Conduct

In an interesting passage Dr. Norwood East comments on misunderstandings about certification under the Mental Deficiency Acts. People interested in welfare and after-care work, it seems, are inclined to criticise doctors for not being more swift to certify in cases of persistent antisocial conduct. He reminds the critics that the certification of mental defectiveness cannot go beyond the statutory definition. In the language of Parliament there must be "a condition of arrested or incomplete development of mind existing before the age of 18 years, whether arising from inherent causes or induced by disease or injury." It is natural enough to argue that persistent delinquency is in itself evidence of mental defect, but the problem is not to be solved by automatic certification. In this connection the medical commissioner gives three instances where there has been a turnover from misbehaviour to normal conduct. All might easily have been classified as cases of mental deficiency, but they turned out to be due, in one instance, to the mental conflicts of childhood afterwards replaced by harmony and maturity, in another to periodical physiological imbalance subsequently readjusted, in the third to the slowness of development of the patient which was eventually caught up. The turnover to normal conduct can sometimes be dated with reasonable precision: "if the former misbehaviour is due to mental defectiveness, we must assume that a mind whose development has been arrested for many years can suddenly overtake that arrest and grow to normality in a few hours; the assumption is contrary to general experience."

Few will now deny the significance of the mental and psychological aspects of crime. The Persistent Offenders Committee recommended that a medical psychologist should be attached to one or more penal establishments to carry out treatment in selected cases. There is plenty of material in our prisons. The examining board of the Royal Colleges, as Dr. East reminds us, has recognised the experience to be gained there. It has lately decided to accept twelve months' appointment as medical officer in one of four large remand prisons as the equivalent of twelve months' mental hospital practice required for the diploma in psychological medicine.

—THE LANCET.

Intravenous Anesthesia With Paraldehyde

• Joseph A. Beauchemin, M.D., Robert G. Springer, D.D.S.,
George A. Elliott, M.D., Middletown, Conn.

IN hospitals for the insane, minor surgery always presents some difficulties. The greater number of the patients cannot understand the necessity for the operation and will not cooperate with the physician, even when it is to their best advantage and for the relief of their physical sufferings. Their fears, persecutory trends of thought, or resistive attitudes render them very difficult subjects. If, in such cases, local anesthesia of the involved area could be obtained, the patient would still be too uncooperative. There must be no consciousness of what is taking place, which, therefore, necessitates a general anesthetic. The administration of inhaled anesthetics arouses the patient's fears to a greater degree and increases his resistiveness. He becomes very hard to handle going under and coming out of the anesthesia. We felt that our problem might be solved by the use of a safe intravenous anesthesia of short duration.

General anesthesia by the intravenous route was demonstrated as a possibility by Ore of Lyons in 1872, chloral hydrate in solution being the hypnotic agent employed. The method seemed very successful in 51 cases, but fatalities led to its discontinuance. In 1910 Burckhardt and others of Berlin and Fedorow of St. Petersburg collected some 500 cases in which hedonal was used with no deaths attributable to the anesthetic. In 1913 Honan and Hassler, surgeons to the Metropolitan Hospital, New York City, published accounts of the technique they had developed for the intravenous use of ether. An incision was made and the median basilic or the cephalic vein was exposed. A cannula was introduced and tied in the vein. A solution of ether and normal saline was allowed to enter the circulation by gravity. Ether was also used in conjunction with isopral, hedonal and paraldehyde. In 1913 Noel and Soutter recommended the intravenous injection of equal parts of paraldehyde and ether at the rate of 5 to 10 cubic centimeters per minute, to be continued throughout the length of the anesthesia.

Paraldehyde has been given intravenously in mental clinics and hospitals at rare intervals and in small doses of 4 to 7 cubic centimeters. Dr. George A. Elliott, now at this hospital, suggested that we investigate this drug and use it, if it were proven of real value, as he had used it in the past at those doses. We were looking for an agent which would not endanger the life of the patient, could be administered in disturbed mental conditions, would require the simplest technique and would produce complete anesthesia and surgical relaxation. We, therefore, performed a series of laboratory experiments on animals for the determination of a safe and convenient dose and the evolution of the simplest technique of administration.

The results with this drug, used on guinea-pigs and rabbits, were indicative of a great latitude of dosage and a fairly broad factor of safety. Guinea-pigs withstood about twice the dose per 100 grams of body weight that rabbits tolerated. In the guinea-pigs, all weighing approximately 500 grams, 4 cubic centimeters of the drug produced their death. One-half of this dose brought about a profound anesthesia for one hour, followed by a deep sleep for 12 to 16 hours. The same dose caused a one-hour anesthesia and five to six hours of deep sleep, followed by some hematuria, in a rabbit weighing 1200 grams. Five cubic centimeters of paraldehyde, injected intravenously, caused the death of fresh, not previously drugged rabbits weighing about 1200 grams. Five cubic centimeters also produced death in those rabbits injected intravenously with progressively increasing doses ranging from .5 to 4.0 cc., allowing for complete recovery between administrations. From this animal experimentation it was concluded that a dosage of one cubic centimeter of paraldehyde per 5 kilograms of body weight should produce a safe, complete anesthesia lasting about 6 to 10 minutes. It was also calculated that a lethal dose for the average 68 kilogram adult (150 lbs.) should be 120 cubic centimeters by mouth and 40 to 60 by intravenous injection. However, we have no absolute proof of the latter statement. The oral dose seemed to agree with cases reported and the information which we could gather in books on pharmacology, which do not mention an intravenous dose. Death in our animals seemed to be due to respiratory paralysis and asphyxiation. We have not been able to ascertain whether paraldehyde exerts its main effect on the respiratory centers in the brain or whether its great concentration in the lungs produces an asphyxia due to lack of oxygen being taken into the lungs or absorbed by the blood. Carbon dioxide and air mixtures have revived laboratory animals in profound anesthesia and oxygen inhalation has immediately changed the color of the skin from a mildly cyanotic to a healthy pink one and has markedly shortened the period of the anesthesia in human beings.

The smallest dose given intravenously by us in human beings has been 5 cubic centimeters. The largest dose has been 19 cubic centimeters at one injection. The drug has been administered by us for minor surgical procedures and in this series for many extractions of teeth, as this afforded a greater convenience for the studies of the patient under its influence. There is no preparation of the patient needed before its administration. We have given it before and after meals, in the morning and afternoon, without any noticeable difference in its action or after-effects.

Sterilization of the syringe and the intravenous needle and sterilization of the vein at the elbow

From the Laboratory and Wards of the Connecticut State Hospital.

are the only aseptic surgical precautions that are carried out. The paraldehyde may be taken right out of the bottle in which it comes from the pharmacy. The patient lies on any table with his clothing loosened at the waist and neck. The calculated dose is taken into the syringe and injected into the vein, using the usual intravenous technique. It should be injected rapidly, that is, at the rate of two centimeters per second. This rapid introduction into the blood stream produces a very rapid and practically instantaneous anesthesia without a second stage of excitement and also prevents coughing on the part of the patient which is probably due to a bronchial spasm caused by the concentrated vapor of the drug being eliminated immediately from the lungs during the injection. The patient drops off into a deep sleep, during or immediately after the injection. If the airway is kept open there is no respiratory difficulty. We have used a Connell's metal airway which is inserted at once at the end of the injection. The patient then shows little or no respiratory distress and simply breathes in his normal manner when in a deep sleep. The subject never senses this respiratory distress if it appears and only one patient in our experience has remembered that he had coughed once or twice before the anesthesia became complete. Even without the insertion of the metal airway the bronchial spasm has disappeared in a few seconds and the respirations have become deep and rhythmical. There may be a temporary blanching of the skin in some cases. The corneal reflexes have always remained present.

The duration of the anesthesia has been variable for different reasons. In many cases it has been our desire that it should last only that length of time necessary for the operation, that is, 3 to 4 minutes. Experiments with dosage also showed some effect on the length of the time of anesthesia, so we proceeded cautiously, using only a fraction of the lethal dose estimated by animal experimentation. The patient's mental condition also played a part in this factor, disturbed and excited individuals requiring a greater dose for a given length of anesthesia and a fat and florid type requiring less. In 55 cases the average dose we have used has been 9.2 cubic centimeters for an adult weighing an average of 60 kilograms (133 lbs.), which produced an anesthesia lasting slightly more than six minutes. Nineteen cubic centimeters was the largest dose given in this series of cases to an individual weighing 46 kilograms (101 lbs.), suffering from pulmonary tuberculosis and in a very excited state, to produce an anesthesia lasting seven minutes. In four cases a dose of 15 cubic centimeters to patients weighing an average of 68 kilograms (about 150 lbs.) gave us an average of 4 minutes of anesthesia. A dose of 9 cubic centimeters given to patients of 66 kilograms weight produced an anesthesia for an average of 6½ minutes. Individual susceptibility to the drug may cause variations in the time of anesthesia by a 2 or 3 minutes' increase or decrease. Alcoholics always need a larger dose. One patient weighing 62 kilograms (136 lbs.) received 15 cubic centimeters and was anesthetized for 21 minutes, while another was under the effect of the drug for only 1½ minutes after a dose of 9 cubic centimeters. One-

half of the original dose has been given within 3 or 4 minutes after the first injection and has had no other effect than to prolong the period of anesthesia by about 50%, calculated in minutes. Preliminary medications have been tried with the idea in mind of doing away with even the slight respiratory distress and the slightest cough at the time of administration. Morphine and scopolamine, morphine and atropine, and atropine alone were given in the ordinary preoperative doses. These drugs all seemed to increase the respiratory distress to a slight extent and were discontinued. Atropine, alone, produced a temporary nausea appearing about an hour after recovery from the anesthesia, and lasting for about 10 to 20 minutes.

The return to consciousness is fairly rapid in most cases. The patient begins to swallow, opens his eyes, regains his consciousness and his hearing, his sight and his pain perception returning in order. All this takes place in a short period of time varying from 2 to 5 minutes. About 30% to 40% of the patients could get up and walk out of the room, awake but a little drowsy. About 75% of our cases could be wheeled back to their ward within 5 minutes after awakening. Some of these patients awakened for a few minutes and later slept on for a variable length of time, that is, one to six hours. There is no memory of the coughing or of the respiratory distress, if any, and all the patients simply state that they went to sleep. We have never had any accident of any kind and have never been forced to use the usual resuscitation measures. We have given a few injections of strychnine sulphate (1/30th gr.) to bring on recovery sooner when the anesthesia lasted longer than needed for the operation at hand.

Honan and Hassler wrote in their article that "intravenous paraldehyde is excreted too rapidly and may severely irritate the bronchi and the lungs." We have given it to individuals suffering from pulmonary tuberculosis and to some patients recovering from colds, and have never observed this effect.

The patients do not complain of any disagreeable odor on their breath as they do not perceive it themselves, although the odor is present for about 24 hours after the administration of the drug. On the other hand, intravenous injection of paraldehyde has the advantage of being a rapid, safe anesthesia without any stage of excitement. There are no postanesthetic headaches, no nausea nor vomiting, no abdominal distention, and pulmonary complications are not met with. Complete relaxation and analgesia are obtained for the surgeon and the technique of administration is very simple. There is an occasional instance when the fluid leaks into the tissues surrounding the vein but this causes no other reaction than some redness which disappears in a few hours. Contraindications for the use of this anesthetic seem to be very few. In fact, our cases include the weak and the aged, the obese, the alcoholic, and patients suffering from cardio-renal disease, general arteriosclerosis, hypertension, tuberculosis of the lungs, epilepsy and diabetes. We have used this form of anesthesia in cases including dental extractions, reductions of fractures in small bones, electrocoagulation of hemorrhoids, incisions for carbuncles and other local infections,

postoperative hemorrhages and hemoptyses. All these cases were also sufferers from some form of mental disease. In practically all cases the anesthesia was adequate for the operation to be performed. The effects of the drug on different body fluids and organs have been studied by clinical observations and many laboratory tests, which were carried out on the circulation, the kidney function, the blood and the spinal fluid. All these could not be carried out completely, individually, on all the patients to whom this anesthesia was given. Pulse rate, respiratory rate, blood pressure, urinalysis, and temperature were investigated thoroughly before and after the administration of paraldehyde on each patient in this series. Complete blood counts, determinations of the coagulation time, and platelet counts were done on 32 of the patients in this series, as these tests necessitated a great amount of time and very tedious work. Blood chemistry tests were done on but 16 of these patients as these also demanded a great amount of time as well as repeated venipunctures on each patient. Intraspinal pressure was taken in only 11 of the cases because of the ordeal to the patient of having four spinal punctures in 24 hours.

There was no definite change in the body temperature after the administration of this substance, as has been stated in many treatises on the pharmacology of paraldehyde. The greatest fall noticed was eight-tenths of a degree, Fahrenheit, and the average decrease was one-tenth of a degree. These findings are negligible. All the cases showed a definite rise in the pulse rate. This appeared at the time of the administration of the drug and lasted until half an hour after the patient awakened. It returned to the normal rate in an hour. The average increase was 19 beats per minute. There was also a rise in the number of respirations, the average increase being 5 per minute. The return to the normal rate was effected in the same manner and time as for the pulse rate. The systolic blood pressure in all cases showed an average decrease of 23.3 millimeters of mercury in all but five of our cases, who showed an average increase of 11 millimeters of mercury. These changes occurred immediately at the time of injection and the pressure returned gradually to the normal level for each patient in about 15 to 20 minutes. The diastolic pressure decreased in the majority of cases to an average of 19 millimeters of mercury. In ten cases it increased only a slight degree, an average of 5 points, or remained stationary. The pulse pressure decreased in the majority of cases to an average of 15 points. In 6 cases the pulse pressure showed a slight increase of 5 points or remained stationary. (See Charts 1, 2, 3.)

Laboratory examinations were made on the urine and the spinal fluid. In the whole series of cases, chemical and microscopical urinalysis revealed no evidence of impairment in the kidney function. There appeared no difference in the findings before the anesthetic was administered or for 48 to 72 hours afterwards. In one half of the cases urinalysis did not show any change in the urinary findings even one week after the anesthesia had taken place. Qualitative tests for the recovery of the paraldehyde

in the urine were positive but quantitative analysis indicated that approximately only 1% to 3%, at the most, of the anesthetic, was excreted through the kidneys. Most of the drug was therefore excreted through the lungs. Scrapings of the body sweat from the skin to the extent of 2 cubic centimeters gave negative qualitative tests, so that the quantity secreted through the skin may therefore be considered negligible.

Blood chemistry tests gave definite but not pronounced changes in the blood constituents after the administration of paraldehyde. In all the cases but three, we saw a definite hyperglycemia, with the wide limits of an increase from 4.9 to 66.7 milligrams per cubic centimeter of blood. The average increase was seen to be about 30.2 milligrams. The blood urea and uric acid both decreased proportionately in all cases but only to a slight extent, ranging from 1.2 to 6.4 milligrams per cubic centimeter of blood. The nonprotein nitrogen also decreased in every case within limits of 1.5 to 9.2 milligrams per cubic centimeter of blood. It is therefore apparent that the blood was affected mostly in its sugar content. The blood protein derivatives showed only slight changes and were probably decreased during anesthesia on account of the much reduced metabolic activity of the body cells and organs. All these findings appeared immediately at the time of injection and disappeared gradually, returning to the patient's normal amounts within 24 hours following the anesthesia.

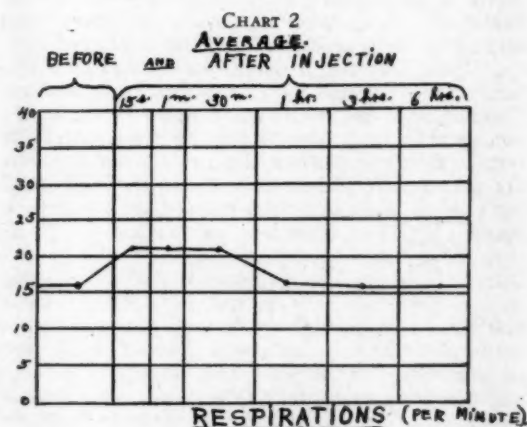
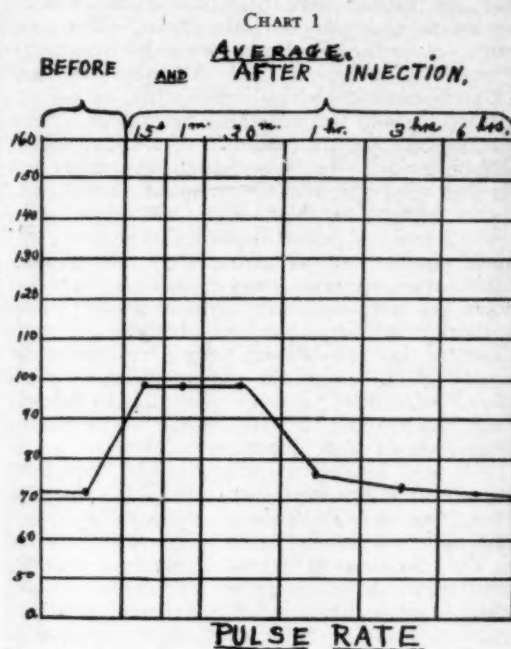
Microscopical blood examinations showed more pronounced changes than the chemical tests. The percentage of hemoglobin increased sharply from the time of injection, in every instance. The average rise appeared to be about 11%, with the changes ranging from a 5 to a 20% increase. This phenomenon remained constant for a period of 24 to 30 hours after the anesthetic was given. The larger doses of the drug did not produce a more pronounced nor a more lasting increase in this percentage. The number of red blood corpuscles increased in every case but this was a gradual rise over a period of 6 to 8 hours, to a maximum, and then a gradual fall to the previous number in 24 to 30 hours. The smallest increase that we noticed was one of 200,000 and the greatest was 2,450,000. The average increase was calculated at 670,000 red corpuscles. The white corpuscles also showed an increase in every case, and again the increase was gradual, reaching a maximum in 6 to 8 hours and a return to the previous count in 24 to 30 hours. The smallest increase was seen to be 600, the greatest was 14,800, the average being 3,160, per cubic millimeter of blood. The polymorphonuclear neutrophils were increased in all cases, with the percentage of the rise ranging from 3 to 12%. The large lymphocytes increased in percentage from 2 to 12%. The small lymphocytes showed a decrease in percentage from 11 to 3%. The basophils, eosinophils and transitional cells, when present, showed no change in number. The blood platelets showed a great increase in number in every case, ranging from 70,000 to 200,000, that is, about 25% to 60%. These changes in the blood cells all take place at the same time and return to their original number in the same

period stated above for the red and white corpuscles.

The changes in the blood hemoglobin, red cells, white cells and platelets may be explained by the fact that the blood seemed to be rendered more viscous or coagulable by intravenous administration of paraldehyde. This effect was evidenced by a marked shortening of the coagulation time of the blood which appeared immediately at the time of the injection and lasted for a period of 24 to 30 hours before returning to the normal time of coagulation. The time at which the blood coagulated the quickest seemed to correspond to that period when the white cells and the blood-platelets reached their maximum number. In the cases reviewed here the time of coagulation was shortened from 15 to 135 seconds in those whose normal coagulation time ranged from 120 to 180 seconds. On the average the results represent an increase in the coagulability of the blood of 60%. This phenomenon was also noticed when paraldehyde was given by mouth, as we proved in a large number of cases. The dose by mouth, however, must be larger than the average oral dose stated in the pharmacopeia. We have given as much as 8 drams by mouth at one dose, in many cases, and without any untoward effect, even when the dose was repeated. The exact mechanism in the production of the increased viscosity and coagulability of the blood is not clear to us as yet. We have not been able to ascertain whether the effect is that of a drain on the platelet reserves in the body or an increased and forced liberation of thromboplastin from the blood elements containing it. We have made quantitative estimations of the calcium in the blood but these have not been constant, 6 out of 15 cases showing a sharp rise in amount and the remaining cases showing no appreciable change. The fact remains that the marked shortening of coagulation time was noticed on all the patients and paraldehyde has been used by us as a therapeutic measure in many cases of hemorrhage including postoperative abdominal hemorrhages, hemoptyses, bleeding cuts as a styptic agent, metrorrhagias and severe nasal hemorrhages. The hemostatic effect was seen to last over a period of 24 to 30 hours and, of course, the danger of an anaphylactic reaction as with horse-serum was never present. In comparative tests with the latter, paraldehyde produced hemostasis much sooner, in as efficient a manner, and for a longer time by 4 or 5 hours in 75% of the cases tried than did the horse-serum.

The intraspinal pressure was also markedly affected by the administration of the drug, either by mouth or by intravenous injection. In 15 patients whose intraspinal pressure was tested before and after the administration of paraldehyde, all showed a sharp and marked decrease in the intraspinal pressure, ranging from 80 to 100 millimeters of water. This effect appeared as soon as the blood-cell changes and the shortening of the coagulation time and lasted as long, returning to the normal pressure within 24 to 30 hours. The sudden fall lasting over such a long period of time did not produce headache or nausea in any of these cases even when it was necessary to do the repeated spinal punctures for these estimations. We are trying, at present, to determine whether paraldehyde given

before a spinal puncture will prevent the post-puncture headache in most cases and in spinal anesthesia. Cell counts of the fluid were not attempted in the above mentioned series of cases but are being studied separately (See Charts, 4, 5, 6).



We offer short abstracts of two cases to show what happens to patients from a clinical and laboratory standpoint:

CASE NO. 1: Margaret D., age 34, weight 107 lbs. Mental diagnosis: dementia praecox, hebephrenic type: screams, yells and sings, very much overactive and in disturbed mental condition. Operation: dental extraction of 9 teeth. Anesthetic used: Intravenous injection of 8cc. of paraldehyde. The patient lifted her head to see the injection made but her head sank back towards the end of the procedure and after coughing once she went into the characteristic sleep with complete relaxation. The teeth were extracted in 3 minutes and the patient remained relaxed for 9 more minutes. The total time of anesthesia was 12 minutes. The patient then began to

CHART 3

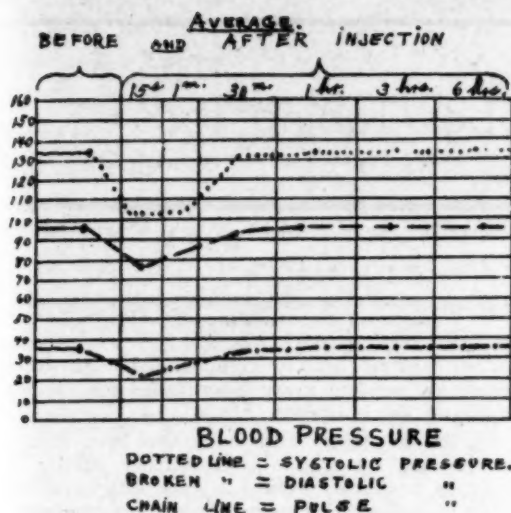


CHART 4.
AVERAGE BLOOD-CELL CHANGES

Before injection	After injection of paraldehyde				
	10 min.	1 hour	12 hours	24 hours	
Hemoglobin ...	76%	87%	87%	82%	78%
Reds	4,100,000	4,770,000	4,770,000	4,400,000	4,150,000
Whites	7,300	10,460	10,460	8,600	7,450
Neutrophils ...	66%	75%	75%	70%	66%
L. Lymphs.....	10%	14%	14%	12%	9%
S. Lymphs....	24%	11%	11%	18%	25%
Platelets	270,000	405,000	405,000	370,000	300,000
Color Index....	normal	normal	normal	normal	normal
Coagulation Time.....	150 sec.	75 sec.	90 sec.	120 sec.	

CHART 5.
AVERAGE BLOOD CHEMISTRY CHANGES

Before injection	After injection of paraldehyde			
	10 min.	1 hour	12 hours	24 hours
Blood sugar... 92.0 mgms.	127.3	124.4	107.8	93.2
N.P.N. 33.6 mgms.	28.4	28.4	30.3	32.7
Urea-N 13.8 mgms.	10.1	10.1	11.8	13.2
Uric Acid.... 2.3 mgms.	1.3	1.3	1.8	2.1

swallow, opened her eyes, turned her head to the side to look around the room and then cried for one minute. She rapidly became awakened and in 7 minutes after opening her eyes was wide awake. She walked from the room on the arm of a nurse.

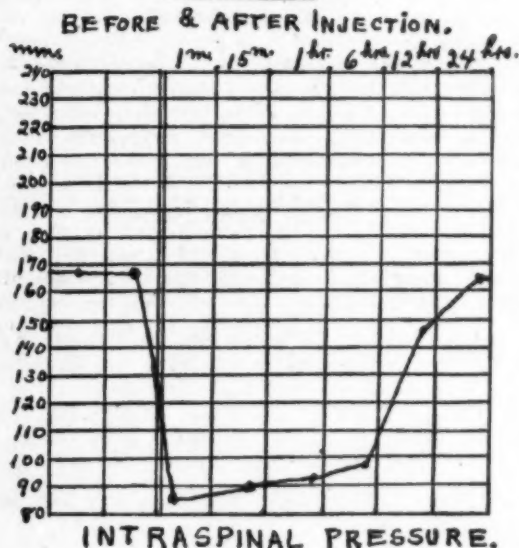
Her temperature remained constant at 99.0 degrees Fahrenheit. Her pulse climbed to 138 immediately after the injection, and was down to 100 in about 10 minutes. Her pulse taken before the administration of the anesthetic had been 98, probably due to the toxemia of badly abscessed teeth. Respirations rose to 26 per minute, from 18 before, and returned to about 20 ten minutes after the injection. Her blood pressure was 145/90 before the paraldehyde was given, 130/90 immediately after the injection, 115/80 twenty minutes afterwards, and was back to 125/90 in half an hour, and 140/90 in an hour. At the time of injection her skin became temporarily blanched and her pupils dilated although the corneal reflex remained present at all times.

Urinalysis showed no changes in the findings for specimens taken during 72 hours. There was a qualitative test done for paraldehyde in the urine which was positive. The blood before the anesthesia showed: hemoglobin, 75%; red corpuscles, 3,400,000; white corpuscles, 9,200; blood sugar, 94 milligrams per 100 cc. of blood; blood urea-nitrogen, 15.6 milligrams; uric acid, 3.2 milligrams; non-protein nitrogen, 36.0 milligrams; blood differential count

gave: neutrophils, 69%; small lymphocytes, 26%; large lymphocytes, 5%; coagulation time, 105 seconds. After the administration of paraldehyde intravenously, the blood gave the following findings: hemoglobin went up to 85%; the red corpuscles numbered 4,100,000; white corpuscles reached 10,600; blood sugar showed 125 milligrams; blood urea-nitrogen gave 10.5 milligrams; uric acid was present in the amount of 1.8 milligrams; non-protein nitrogen gave a figure of 27.5 milligrams; the blood differential count gave: neutrophils, 78%, small lymphocytes 14%, large lymphocytes 8%; the coagulation time went down to 40 seconds and in 12 hours still was down to less than 80 seconds. In 24 hours it was back to 100 seconds. Patient showed no untoward effect of any kind.

CASE NO. 2: A. J. a male patient operated for electrocoagulation of hemorrhoids, aged 53, weight 116 lbs. This patient suffered from general arteriosclerosis with hypertension and had an inguinoscrotal hernia. Mentally, he had a marked persecutory trend and was very resistive to any treatment. The intravenous dose of paraldehyde was 12 cc., which produced anesthesia and complete relaxation for more than 8 minutes. Five internal and three external hemorrhoids were coagulated. Before the

CHART 6.



anesthesia, he gave the following clinical and laboratory findings: Temperature, 98.4 degrees F.; pulse, 72; respirations, 20; blood pressure, 180/95; urinalysis, negative except for a rare hyaline cast; blood hemoglobin was 75%; red corpuscles numbered 4,200,000; white corpuscles were 6,900; neutrophils averaged 62%; small lymphocytes averaged 22%; large lymphocytes averaged 16%; blood platelets were 270,000; blood coagulation time was 70 seconds; blood sugar showed 75 milligrams per 100 cc., non-protein nitrogen was present in the blood in the amount of 37.3 milligrams; urea-nitrogen gave a figure of 13.6 milligrams; uric acid showed 2.9 milligrams in the blood; intraspinal pressure was 160 millimeters of water.

After the intravenous administration of the dose of paraldehyde the clinical and laboratory picture changed to the following: Temperature remained at 98.4 F.; the pulse rose to eight-three beats per minute where it remained for 40 minutes and then came down to 73 or 74 in an hour; the respirations increased to 24 per minute, remained at that figure for about 35 minutes and then returned to 19 per minute in about an hour; the blood pressure dropped to 130/90 and returned gradually to 160/90 in about half an hour; urinalysis gave the same findings as before the anesthesia; the blood hemoglobin increased to 85%; red corpuscles numbered 4,600,000, an increase of 350,000; the white corpuscles numbered 8,400, (Concluded on page 184)

Clinical Notes, Suggestions and New Instruments

The Radio-Opacity of Rubber Tubing for Drainage Purposes

• Theodore J. Edlich, Jr., Sc.B., M.D., New York, N. Y.

THE radio-opacity of rubber tubing for drainage purposes has been a much neglected attribute. It serves as a means of identification of tubing lost within a body cavity. Every surgeon has heard at some time of either a drain lost within the abscess cavity of an empyema, or of a split tube, improperly retained, that has entered from an infected abdominal wound or hernial repair into the peritoneal cavity. In hospital practice, where the responsibility of surgical cases is partially held by the inexperienced (and the experienced are not infallible), accidents do occur, and the consideration of a detail, such as the radio-opacity of the rubber used, will prove invaluable in its identification by x-ray and its subsequent recovery, not to speak of medicolegal contingencies.

Rubber itself is a hydrocarbon and as such is transparent to x-rays. However, commercial compounds usually contain added fillers, such as calcium carbonate, barium sulphate, and the like, in

From the Surgical Service of The Fifth Avenue Hospital, New York City.

order to improve the usefulness of the rubber for the particular purpose for which it is intended. Rubber aprons heavily compounded with heavy metals are used in x-ray laboratories for the protection of the operators.

Up to the present time, there has been little or no demand for radio-opaque rubber tubing for drainage purposes. Hence a given sample of tubing, with composition unknown, may or may not be radio-opaque. It is suggested by the author that orders for rubber tubing have the added specification of tested radio-opacity.

Radio-opaque graduations on rubber tubing offer further possibilities.

REFERENCES

Gerke, R. H., U. S. Rubber Co., personal correspondence with the author.

Hanna, E. L., Davol Rubber Co., personal correspondence with the author.

U. S. Dept. of Commerce, Bureau of Standards, A Guide to the Literature on Rubber.

155 East 45th St.

Intravenous Anesthesia With Paraldehyde

(Concluded from page 183)

an increase of 1200; the neutrophils averaged 68%; the large lymphocytes decreased to 13%; the small lymphocytes averaged 18%; blood platelets increased to 324,200, a difference of 52,200; blood coagulation time dropped from 70 to 30 seconds, that is, over 100% increase in the coagulability of the blood; blood sugar rose to 98.2 milligrams per cubic centimeter of blood; non-protein nitrogen dropped to 25.4 milligrams per 100 cubic centimeters of blood; urea-nitrogen dropped to 8.7 milligrams per 100 cubic centimeters of blood; uric acid showed 1.1 milligrams; the intraspinal pressure dropped to 30 millimeters of water, was up to 69 millimeters in 6 hours and back to about 160 millimeters in 26 hours.

Summary: In a series of fifty-five insane patients, paraldehyde, intravenously, was used as an anesthetic after tests on laboratory animals had shown the approximate dosage. It was found that, theoretically, 60 cubic centimeters of paraldehyde could be injected intravenously without causing death, although in this series 19 cubic centimeters was the largest dose given. The anesthesia produced lasted from 1½ minutes to 21 minutes, the duration depending upon individual variations.

Marked changes in the pulse rate, respiration,

blood and spinal fluid findings, as well as in the blood count and coagulation time, were produced by the drug in these cases.

From these experiments it is concluded that paraldehyde, intravenously, in considered dosages, is an excellent anesthetic for operations requiring only a short time to complete. It is comparatively safe and may be given in various conditions in which the local or general inhalation method is impractical.

BIBLIOGRAPHY

Anesthesia, by James Tayloe Gwathmey, M.D., The Macmillan Co. Intravenous Anesthesia, Honan & Hassler, Annals of Surgery, December, 1913.

General anesthesia by intravenous injection of paraldehyde and ethyl alcohol. I. I. Nitescu, Comptes Rendu, Société de Biologie. III: 337-339, Oct. 21, 1932.

Leucocyte Picture in Pulmonary Tuberculosis

Kelley (*Bull. of Johns Hopkins Hosp.*, 55:171, 1934) states that tuberculosis complications and other superimposed infections influence the blood picture to a great extent and therefore must be ruled out before any interpretation is given. Repeated counts are valuable in detecting relapses. The filament-nonfilament count is placed at 16 per cent. of the neutrophils. When the nonfilament cells exceed this number they are nearly always an indication of septicity, and sometimes this count yields information that cannot be obtained by any other laboratory test.

Cancer

Department Edited by JOHN M. SWAN, M.D. (Pennsylvania), F.A.C.P.

EXECUTIVE SECRETARY, NEW YORK STATE COMMITTEE OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

Assisted by CHARLES WILLIAM HENNINGTON, B.S. (Rochester), M.D. (Hopkins), F.A.C.S., *German Literature Editor*, and UMBERTO CIMILORO, A.B. (Cornell), M.D. (Rome), *Italian Literature Editor*.

Is Cancer Becoming More Prevalent?

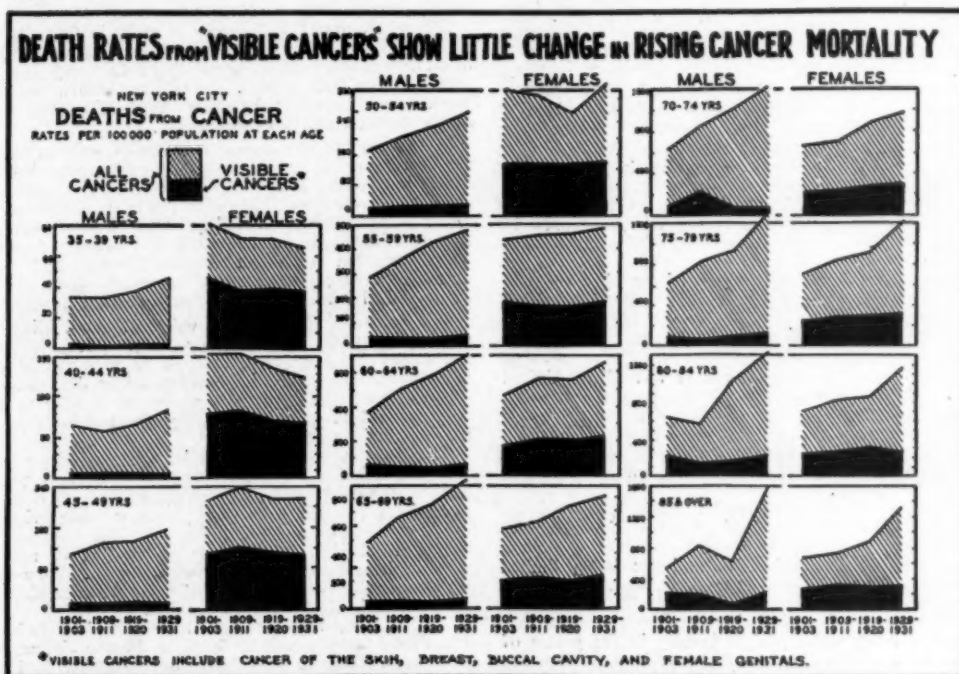
• Charles W. Hennington, B.S., M.D., F.A.C.S., Rochester, N. Y.

THE title of this paper is purposely made identical with that of an admirable one by Charles Bolduan and Louis Weiner which appeared in the *American Journal of Cancer* in August, 1934 (1). It is intended to refer to a remarkable series of graphs there published and to invite consideration of an alternative interpretation of the statistical findings which these graphs illustrate.

This striking group of graphs appeared originally in the *Quarterly Bulletin*, Department of Health, City of New York (2). They demonstrate that whereas cancer

pate in this increase" (1). In contrast to this statement I would invite attention to an alternative interpretation: that evidently great numbers of cures are occurring in this particular classification of visible cancers.

In order to establish this latter point, I shall quote for comparison from a well known tabulation in the little book on *Essential Facts About Cancer*, published by the American Society for the Control of Cancer, 1924 (3, p. 11). The tabulation is credited to Hoffman and entitled: *Estimate of the Mortality from Cancer in the United States, 1923*. It assumes a total of exactly 100,000 deaths which



appears to be becoming more prevalent in New York City for each age group, yet the so-called "visible" cancers do not participate in this increase. Through the generosity of the authors the graphs are reprinted herewith.

By definition "visible" cancers include four of the seven large statistical groupings, namely, those of the skin, breast, buccal cavity and female genitals. The conclusion that Bolduan and Weiner voice is: "If cancer were actually becoming more prevalent in the various age groups, it would be strange not to have the visible cancers partici-

are divided into the usual seven groups of the old classification. I am separating them into visible and other cancers on the same basis as Bolduan and Weiner:

skin	3,190	stomach, liver	37,191
breast	9,198	peritoneum, intestines,	
buccal cavity	3,422	rectum	13,967
female genitals	14,659	other and unspecified	
		organs	18,373
visible	30,469	invisible	69,531

For comparison with these let us arrange the tabulation of cured proved cancer cases collected by the American College of Surgeons and reported in their Year Book 1934 and also in the special number of *Surgery, Gynecology and Obstetrics*, February 15, 1934 (4). Of a total of 24,448 cured cancers there is a surprising preponderance in the visible group. I have separated these to correspond to the above classification:

skin	1,124	stomach	909
breast	8,051	colon, rectum	2,067
mouth, lip	1,506	kidney	255
cervix	6,669	bladder	547
fundus	1,223	prostate	108
cervix and fundus ..	98	testes	78
ovary	564	penis	24
vagina, vulva	75	thyroid	465
		larynx	110
visible	19,310	eye	22
		bone	173
		others	380
		invisible	5,138

Some readers may comment that the internal female genitals are not really visible but I must refer them to the definition near the beginning of this paper, and in addition one might remark that usually there is unusual bleeding which early makes these manifest even if not visible. And on the contrary cancers of the external male genitals and of the thyroid and of the eye cannot be placed into the visible group because the definition is one current in vital statistics. It is easier to adhere to the old unrevised groupings. Yet even in the recent 1929 revised international list cancers of the jaw are still included in the buccal cavity and not under bones (11, p. 80). As the figures stand nearly 79% of the cures are in the visible group, which is the smaller group, having only about 30% of cancers in general.

The actual cures in the visible group must be even higher because many of the smaller cancers of the skin are cured but no histological sections are ever made because of treatment by electrocoagulation or by irradiation. Obviously these are not eligible to appear in the above table because the proof of a cancer in the strict sense is lacking. One must keep this in mind for it explains the incongruity of relatively poor showing of skin cases in the list of cured cancers. Fortunately the success does show in the graphs.

In contemplating such great lists of cured cases one stands in admiration of the laborious collecting of all these cases which have been followed for five years and over. These totals, especially if enhanced by assumed cures and unreported cures, are reaching a sum so large as possibly to equal the annual cancer toll in the United States. I have had the opportunity to observe the untiring energy expended by Swan (5) in collecting the cured cases in Rochester, N. Y. He has records since 1925 with annual follow up of 150 individuals whose lives have been saved in the six local hospitals. Of these about 75% fall into the visible group.

The application of any mathematical methods of statistics is not contemplated and would add a sense of greater accuracy than is warranted by the nature of the clinical data, not being as comprehensive and not being limited to any one locality nor divisible on an annual basis. We must content ourselves in making a visual comparison. Merely to glance at the tabulations makes it evident that the cures are being accomplished largely in the group of visible cancers. From the first tables it is clear that the visible group in 1924 constituted 30% of all cancer mortality. Further, on inspecting the graphs carefully, this figure of 30% seems to be in agreement with the proportions there given of the earlier of the four periods 1901-3, 1909-11, 1919-20, 1929-31, indicating despite the varying age groups that a decidedly smaller proportion is in the visible class. On observing the tabulation of cures we note that 79% of them are in the visible cancers. In other words the aggressive attack of surgery and of irradiation has concentrated on the smaller group. This is not merely because they are visible but because by chance it has happened that they have lent themselves to earlier diagnosis and have been accessible and otherwise have

proved more amenable to our methods of treatment. The invisible group is remote, inaccessible, unfavorable for early diagnosis and often refractory to our present modes of treatment.

Another factor to be considered is that the success of the Public Educational Campaign is more likely to be effective in this very group of visible growths. In order to make an appeal to the laity, these lesions of the skin, breast, mouth and lips, and due to the emphasis upon abnormal bleeding, those of the female generative tract as well, have been preached evidently with a considerable degree of effectiveness. On the other hand in the invisible group aside from an emphasis on indigestion it has not been possible to call attention to any very striking symptoms which the public would remember and discuss. I believe these graphs register the achievement of the educational campaign of the American Society for the Control of Cancer and of similar agencies, and they are in agreement with the methods and results observed by Swan (6).

Prophylactic or preventive measures too are carried out. The recognition of precancerous lesions or lesions upon which it might be expected that cancer would occur and their eradication also falls into this very group of visibility. The removal of all lesions of the skin whether serious or mere blemishes is so commonplace as to take minor rank. As a rule these cases are not well recorded and not followed up very long. Greater care of lesions of the cervix is being established. The total of these is much larger than the figures indicate.

Thus all three factors are centered in each case on the visible group. These influences affect the graphs in exactly the way one would anticipate. In accordance with these presuppositions the general increase is held in check in this visible type.

That there might be a source of error in that the graphs refer only to an urban population is improbable. The usual differences between urban and rural conditions would seem to have little import. Swan's statistics refer to New York State exclusive of New York City and he also shows an increased prevalence (7).

My attempt to use clinical summaries such as these collected recoveries to substantiate or interpret Vital Statistics may entail a number of imponderable inaccuracies. It is likely, however, that the future will show a much wider use of clinical morbidity statistics joined with mortality statistics. In fact, Macklin (8) urges the obligation of government to collect various clinical data over an extensive area and thus establish something in the nature of a clinical investigative bureau of cancer research.

The graphs well show the value of subdividing cancer material into that of organs or parts. Both Hoffman (9, 10) and Pearl (11) have emphasized this. Perhaps even these graphs if further subdivided might demonstrate additional details to advantage, provided, of course, that the captions would still have sufficient magnitude to make the conclusions trustworthy.

The mere increase of cancer because of greater aging of the population does not imply that cancer is a greater menace than formerly. By arranging the material in age groups the true increased prevalence is made evident. According to Dormann (12), the cause of this increase is not convincingly demonstrable. A number of minor factors to be mentioned must be evaluated. The residual represents the actual figure for the true increased prevalence, that is the increased menace.

Among these minor factors is improved diagnosis. This constitutes only a slight increase in the figures in the opinion of Thomas (13), based on the Düsseldorf autopsy experience. The greater use of x-ray diagnosis, biopsy, autopsy and other measures is enhancing the totals but only to a small extent. Another effect is attributable to certain rules of classification when several joint causes of death are given on the certificate (11, p. 96, 14, 15). The trend in these rules has been to credit the death to cancer because statisticians have wished to make the incidence of mortality a useful index of the morbidity of such an important disease.

Nevertheless, allowing for all these factors, it seems justifiable to conclude that these graphs in the main are to be interpreted that in general cancer is really becoming more prevalent. And these graphs show with certainty,

I believe, that in the visible group successful prevention and cure is effective. To my mind these diagrams of statistics should encourage very greatly all workers both in the cancer educational campaign and in cancer therapy. We seem to have convincing evidence that we are salvaging large numbers in those types in which at present our methods are particularly applicable. We are literally saving thousands of persons suffering from visible cancer from being entered upon the mortality lists. Nevertheless, we are conscious of the challenge still presented by the larger group of invisible cancers.

BIBLIOGRAPHY

1. Bolduan, C., and Weiner, L.: Is Cancer Becoming more Prevalent? *Am. J. Cancer*, 21:825, August, 1934.
2. Same in Quarterly Bulletin, New York City Dept. of Health, Vol. 2, No. 1, p. 1, 1934.
3. Essential Facts about Cancer, 1924. Pub. by Am. Soc'y for Control of Cancer. Also Martin, F. H.: The Curability of Cancer.
4. Am. College of Surgeons, Year book, p. 25, 1934. Also *Surg. Gyn. Obstet.* 58:425, February 15, 1934.
5. Swan, J. M.: A Resume of the Five or More Year Clinical Cases of Cancer Reported at the Sixth Annual Meeting of the New York State Committee of the American Society for the Control of Cancer. *Medical Times and L. I. Med. Jour.*, 60:218, 1932.
6. Swan, J. M.: Report of Cases of Cancer Cured for Five or More Years. *Medical Times and L. I. Med. Jour.*, 61:179, 1933. *Ibid.* 62:81, 1934.
7. Swan, J. M.: Cancer Situation in State of New York. Statistics for 1929-30 and Annual Average for Five Year Periods 1924-28, 1925-29. *Medical Times and L. I. Med. J.*, 60:103, 1932.
8. Macklin, M. T.: Value of Accurate Statistics in Study of Cancer. *Canad. Pub. H. J.*, 25:369, August, 1934.
9. Hoffman, F. L.: Mortality of Cancer throughout the World, 1915. *Prudential*.
10. Hoffman, F. L.: The Cancer Mortality of Mass, *New Engl. J. Med.*, 208:782, 1933.
11. Pearl, R.: *Medical Biometry and Statistics*, 2nd Ed., Phila., Saunders, 1930.
12. Dormann, E.: Problem of Increase of Cancer, *Zeitsch. f. Krebsf.*, 39:40, 1933.
13. Thomas, L.: Statistics on Cancer in Dueseldorf, *Zeitsch. f. Krebsf.*, 39:168, 1933.
14. Miller, J. R.: Do Official Death Rates Accurately Reflect Present Conditions? *New Engl. J. Med.*, 208:490, 1930.
15. Lyon, I. J.: A Statistical Study of a Rural Cancer District in the State of New York, Brookfield, Madison Co., N. Y. State Dept. of Health, 23d Annual Report, 1902.

Disabled Feet

(Concluded from page 174)

there is no question but that daily walking, with the feet held in good position by comfortable insole supports, will go a long way toward cure, in those with mild disability. True anatomical cure, however, cannot be attained until muscle balance is restored. Persistence in stated foot exercise hastens this.

7. Depending upon the severity of the case, comparative comfort should be attained after the first visit and real comfort in from two to three weeks in uncomplicated cases of weak feet. The reestablishment of muscle balance takes longer. There comes a time when the use of insole supports should be gradually withdrawn. When the intrinsic muscles are able to "do their job," artificial support should not be continued; but it should not be withdrawn too suddenly. For the aged and where there are bad complications, this may never be wise. Yet, even with experience, the doctor gets some pleasant surprises with bad cases. He should always expect improvement, and usually real foot efficiency, if the foregoing suggestions have been followed through.

Care of feet, if undertaken at all, should be taken seriously. Painful feet are very disabling. A thoughtful sequence of short-time padding and strapping, of gradually raised properly fitting light insole supports, and of persisting in specialized foot

exercises, leading to a gradual withdrawal of artificial supports, usually results in a rapid cessation of pain, in a progressive attainment of proper weight balance and in good muscle balance with foot efficiency.

The treatment of perplexing complications cannot be noted here. The occasional operation, especially for hallux valgus (bunion) and for hammer toes, and the reconstruction of paralytic feet may only be mentioned. The average disabled foot is well worth caring for and the gratitude of the patient restored to comfort and usefulness is satisfying.

80 Hanson Place.

Nutrition and Infection

S. W. CLAUSEN, Rochester, N. Y. (*Journal A. M. A.*, March 9, 1935), states that loss of resistance to infection has been established by animal experiments in cases of deficiency of vitamins A and C, and with some degree of certainty in cases of deficiency of vitamin B. Clinical observations also indicate that loss of resistance to infection occurs in man with outspoken deficiency of vitamin A and probably of vitamin C. There is some indication but not yet certainty that animals with rickets are more susceptible to certain infections. Rachitic infants are no less resistant than nonrachitic infants to infections outside the respiratory tract; it is not yet certain that their resistance to respiratory infection in general is decreased by rickets, with the exception of pertussis, in which disease resistance is very much decreased. There exists no evidence in experiments with animals or in clinical observation that the addition of any of the vitamins to the diet will increase the resistance to infection of the host when the host has already been consuming a normal diet. There is also no evidence that a good diet will decrease the number of infections during the first six months of life. There is some evidence that an adequate diet in the early months of life may decrease the severity of infections during the latter part of the first year and during the second year. There is little reason to believe that the administration of vitamins after the onset of an acute infection will exercise any benefit on resistance. Chronic infections have so far not been adequately observed, with the exception of tuberculosis. Beyond doubt a constitutional state exists in infants characterized by the susceptibility to infection and a loss of resistance. This state tends to persist. Many factors besides diet contribute to this state: age, sex, heredity, allergy, prematurity and earlier severe illness. The author believes that an early adequate diet, particularly one rich in vitamin A, tends to prevent the development of this condition.

Leukemia: Its Diagnosis and Treatment

NATHAN ROSENTHAL and WILLIAM HARRIS, New York (*Journal A. M. A.*, March 2, 1935), believe that the relative occurrence of the three principal groups of leukemia apparently corresponds with the relative percentage of the various types of leukocytes in the circulating blood; namely, granulocytes, lymphocytes and monocytes. The underlying systemic disorders present in all cases is essentially the same. An arbitrary division may be made according to the duration of the disease, acute or chronic, and also according to the number of white blood cells, into leukopenic and leukocytic forms. Symptomatology, although of great value in differentiating the disease, is unreliable for purposes of diagnosis. This should be based on the characteristic blood changes, which do not depend so much on the number of white blood cells as on the presence and persistence of specific types of cells, such as myelocytes, myeloblasts and relative and absolute lymphocytosis. Confirmatory diagnosis of the more obscure varieties may be made by biopsy on the sternal bone marrow or on a lymph node. The treatment of leukemia is largely symptomatic. Arsenic, transfusions and particularly roentgen irradiations are the chief means of inducing symptomatic improvement, remission or possibly prolongation of life.

Economics

Department Editor: THOMAS A. MCGOLDRICK, M.D.

Workmen's Compensation: The New Amendments to the Law

WHEN the Workmen's Compensation Law was enacted its purpose was to secure for an injured employee some recompense for the time lost by him during his disability, to obtain for him good medical treatment and hospital care, to hasten his return—cured—to industry, and to remove, as far as possible, the causes of accidents. An Industrial Council of ten was authorized to advise the Industrial Commissioner on the administration of the law. Five of the members of the Council represented Labor and five were representatives of Employers or Industry. Although the law depended so much on those giving the care and treatment, on the quality of that care, and freedom from abuse of the injured, there were on the Council no members of the medical profession. Despite the great amount of good that came from this law, many abuses did creep into its administration and the possible benefits were greatly curtailed. Employees, employers, carriers of insurance and doctors complained. Every session of the Legislature saw many amendments proposed for its improvement, several of which were added to the law.

The Amendments added to the law in the last session of our Legislature are radical in ways but have been reached through years of investigation and study. Despite objections raised they will prove of great benefit to all those concerned.

The injured workman will have, under some restriction, the choice of the physician. He will then have as physician one who will take a personal interest in the patient's welfare, a physician who will be prepared to produce, in the event of dispute, reports and records that will give a full and true account of the case. The workman will not be driven to commercialized clinics conducted primarily for the income they receive, nor to the clinics of insurance companies whose principal purposes are to keep expenses low and to return the patient to work as quickly as possible. The workman, now, will not be returned to work before he has recovered.

By the restrictions placed on the choice of the physician the employer will know that the employee for whose treatment he is paying will receive proper care. Inspection and verification of the quality of that care is still in his control and so is his privilege of "lifting" the case under justified circumstances. He is protected from excessive charges by a published schedule of fees promulgated by the Industrial Commissioner and if doubt or dispute arises arbitration is his right. He will now receive from the doctors reports of the injuries not within twenty days but within two days—and frequently thereafter. There will be no soliciting of his foreman or himself for business nor will gratuities or graft in any guise be tolerated. If his business be hazardous or the risks numerous or severe the employer may establish his own medical service to compete with other private service and which by its merits may act, not as a "yardstick", but as an attraction to employees to choose that service.

The doctor will find protection in his work. Competent care or skillful first treatment will not be rewarded by having the patient immediately taken from him and sent to a less expensive doctor, with an insinuation of incompetency and dishonesty. His bills properly made and rendered will be promptly paid. The fixed schedule will prevent misunderstandings. He will not be obliged to waste hours of time and give sworn testimony with cross examination without good reason. He will have his County Society to confirm his qualifications, to support him when he is right or to recommend punishment for him when deserved. Doctors of ability, who heretofore would not engage in industrial work, will now give to it their experience and skill.

Upon Organized Medicine will fall many heavy and expensive responsibilities. These are assumed cheerfully for the great good which can be done. In the enlarged Council under the new law five of the fifteen members must be members of the professions rendering service under the Act. These members must be selected with great care, with a knowledge of their sympathy with the purposes of the law, and with a confidence in their willingness to devote, freely, much time and study to it. The County Societies will receive, certify and forward to the Industrial Commissioner the qualifications of all doctors who apply for licenses whether or not they are members. The Societies must help in preparing proper schedules of fees. Selected members must serve on Committees to arbitrate disputed fee questions, must inspect and certify permitted clinics, must investigate, take evidence and forward it with a report to the Industrial Commissioner on charges preferred against any physician in the respective counties. They must have the strength, the courage, as they have the intelligence, to stand firmly on their convictions. Medicine can successfully carry its extra responsibilities. From the Society standpoint it will be the presentation to the public of another one of Medicine's contributions to the general and individual good. It will show how essential Medicine is and how it will continue to merit its high position in public opinion.

Experiences with Gonococcus Filtrate (Corbus-Ferry) and Other Forms of Intradermal Therapy in Treatment of Gonorrhea

Gonococcus filtrate (Corbus-Ferry) intradermally is the only antigen of the several that ROBERT E. CUMMING and ROBERT A. BURHANS, Detroit (*Journal A. M. A.*, Jan. 19, 1935), have used that seems to offer a specific aid in the treatment of gonorrheal infection and complications. No attempt has been made to explain the rationale of intradermal medication or to establish the part played by the skin in body immunity. They demonstrate that the filtrate can be used alone in the treatment of gonorrhea. It is their impression that gonococcus filtrate is most serviceable as an adjunct to mild local treatment. The filtrate is indicated in acute and chronic gonorrheal infections of men, women and children. It has been used freely in all types of complications and, in their opinion, has some virtue in amelioration, although other treatment, not so important in simple urethral involvement, is of prime necessity. The authors have not followed the recommendation of Corbus but have used the filtrate freely in all stages of the infection and complications. They have departed from the recommended dosage scheme by giving not more than 0.1 cc. of filtrate (children should receive from 0.05 to 0.15 cc. of filtrate), increasing weekly by from 0.05 to 0.2 cc. (1/20-4/20), depending on the local skin regional lymph gland, and systemic reactions as well as on the character of urethral discharge and the states of the infection. Complications are today, as they have always been, of greatest importance in gonorrhea; late and unexpected transmission of the disease, sterility in both sexes, and the determination of safety in marriage are questions peculiarly in the domain of the consulting urologist. The determination of cure in gonorrhea has always been a difficult problem. The authors believe that their use of gonococcus filtrate in large doses (from 0.1 cc. to 0.4 cc.) as a diagnostic or provocative agent to demonstrate dormant infection is a milestone in progress toward the ultimate cure of obstinate gonorrhea.

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Rhinolaryngology

(Concluded from page 162, May issue)

Fulminant Sinus Disease

F. L. Lederer (*Surgery, Gynecology and Obstetrics*, 60:645-656, March, 1935) notes that fulminant sinus disease occurs most frequently in infants and young children; usually the ethmoid sinuses are involved, although a pansinusitis may occur. The frontal sinus is not infrequently involved, sometimes in association with ethmoid sinus involvement. A case of fatal osteomyelitis of the maxilla and cavernous sinus thrombosis resulting from rhinitis and sinusitis in an infant three weeks of age is reported, in which careful histological study of sections in series showed the course of the infection. The site of origin of the infection was in the inferior turbinates resulting in a suppurative process in the maxillary sinus and the ethmoidal labyrinth; the exudate in the maxillary sinus denuded the bone and caused a necrosis with the formation of a fistulous tract; septic thrombi from the maxillary and ethmoidal suppurative process also invaded the venous channels and produced a cavernous sinus thrombosis. In this case probably no therapy, conservative or radical, would have halted the extension of the infection or saved the life of the patient. On the basis of their clinical experience in cases of fulminating sinus disease, the authors advise "an expectant conservative attitude" in the early stages of the disease when edema of the lids is present. If the condition shows no tendency to regress and if symptoms become more marked, surgical procedures for drainage are indicated. The surgical route chosen may be extranasal or intranasal, "depending upon the proximity to the focus to be drained and the chances of avoiding trauma."

COMMENT

We agree that fulminant sinus disease occurs mainly in infancy and young children and is often associated with ethmoid conditions. The fatal osteomyelitis of the maxilla and cavernous sinus thrombosis reported in a child three weeks of age is similar to one of our cases seen some years ago. We agree with the author's conclusion that one should be most conservative in the treatment of these cases until operation is imperative.

H. H.

Intestinal Bacterial Flora in Chronic Sinus Disease

S. N. Parkinson (*Laryngoscope*, 45: 140-148, February, 1935) notes that the occurrence of general symptoms in chronic sinus infection is generally recognized; he has found that fatigability is one of the most common of these symptoms. These symptoms are to be attributed to a toxemia arising from the sinus infection. While this toxemia may be due to absorption of toxins through the sinus and nasal mucosa, recent studies have indicated that the intestinal tract may be secondarily infected by the swallowing of infectious material and may become an important source of toxic absorption. In 24 cases of chronic sinus infection showing various general symptoms of toxemia, nasal and rectal cultures were made. While the organisms found in the nasal and rectal cultures did not

perfectly correspond in all cases, the similarity was too great to be considered as merely incidental. In all cases, at least, one pathogen was common to both cultures, and in several cases apparently identical strains were found in both. These findings seem to the author to suggest that intestinal infection secondary to the sinus infection "may play an important part in the production of the toxemia of sinus disease."

COMMENT

It is rather interesting to note that most types of bacteria which may be isolated from the nasal mucous membranes may also be found in rectal cultures. It is rather unwise to presume that because of these facts, infection in the nose has been causative of any specific action on the gastro-intestinal tract. On the contrary, we have often felt that gastro-intestinal infections have lowered the resistance of patients to such an extent that the nasal mucosa becomes less resistant. The author concludes that his findings show that intestinal infection may be secondary to a sinus infection and may play an important part in the production of a toxemia. We rather question this statement; many cases of so-called sinus diseases have been cured by thoroughly correcting all intestinal conditions.

H. H.

Otolaryngology

Prenatal Medication as a Possible Etiologic Factor of Deafness in the New-Born

H. M. Taylor (*Archives of Otolaryngology*, 20:790-799, December, 1934, and *Southern Medical Journal*, 28:125-129, February, 1935) in his first article reports a case in which a child showed nerve deafness at an early age (two years), and was in otherwise good health; there were 3 other healthy children and no history of deafness in the family. The history showed that the mother had been given quinine at the time of labor, which had caused a temporary deafness and an urticaria. In a review of the literature, the author found one other case reported in the South (Washington County, Georgia) in 1870, in which nerve deafness in the child followed administration of quinine to the mother during pregnancy for malaria; the mother in this case had also suffered from a temporary quinine deafness. In the second article, the author reports 3 cases of congenital nerve deafness in children in the Florida State School for the Deaf and Blind, in which no cause for the deafness could be found in the personal or family history except that the mother had taken large doses of quinine during the pregnancy. In all these cases the mother had also developed more or less permanent deafness from the quinine. A fourth case is also noted, now under investigation, in which the mother was given quinine intravenously for pernicious malaria in the seventh month of pregnancy, and the child, now five years old, is totally deaf. A review of the statistics of sixteen schools for the deaf in the United States shows that in the South, dates of birth of the children are more than twice as numerous in the second half of the year, while there is no relationship between the date of birth and deafness in northern schools. This corresponds with the use of quinine in the treatment of malaria which prevails

from July to January. It has long been recognized that quinine may cause tinnitus and deafness, and Witmaack and other investigators have shown that it causes definite pathological lesions in the internal ear. It has also been demonstrated that the placenta is permeable to quinine and to other drugs that may cause nerve deafness—alcohol and the salicylates; and that these drugs may be toxic to the fetus. The role of prenatal medication as a possible etiologic factor of deafness in the new-born “invites widespread investigation both clinically and experimentally.”

COMMENT

That various medicines can cause affections of the auditory nerve is a well known fact and among those that do the most harm is quinine. Dr. Taylor has brought out this point very nicely by showing that certain children who are deafmutes seem to have acquired their deafness because the mothers took large doses of quinine during pregnancy. In some cases the mother has also become deaf. Such a state of affairs may not be seen so often in the North, but large quantities of alcohol and salicylates may cause similar accidents.

H. H.

Diagnosis of Hearing Impairments

In the diagnosis of impairment of hearing, I. H. Jones and V. O. Knudsen (*Laryngoscope*, 45:24-47, January, 1935) note that three factors are important: 1. The history of the patient; 2. direct inspection of those parts of the ear, nose and throat that can be seen; 3. determination of the condition of those parts that cannot be seen, by means of hearing tests. In routine practice they have found it useful to take the history and make hearing tests before making direct inspection of the ear, nose and throat by the usual methods. In regard to hearing tests, any good audiometer may be used, or even a set of calibrated tuning-forks, but it is important that such tests be made in a soundproof room, or at least a quiet room where the patient does not at any time hear any noise in the room. Testing of bone conduction in such a room is important; while bone conduction may appear to be “greater than normal” in an ordinary room, in a soundproof room it will be found that this is not the case, and that bone conduction is either normal or less than normal. Bone conduction should be tested by at least three frequencies—low, medium, and high. Bone conduction, rather than air conduction, has been found to indicate whether the deafness is of the conductive, perceptive or mixed types. In the purely conductive type, bone conduction is normal for all tones; the loss of acuity by air-conduction is greatest for tones of low pitch. In the purely perceptive type of deafness, the audiometer curves for air conduction and bone conduction are practically identical and the greatest loss of acuity is for tones of high pitch. In cases of a mixed type, the acuity of hearing by air conduction is greatest for tones in the middle register; the bone conduction is normal or nearly normal for tones of low pitch, but quite markedly diminished for tones of high pitch. Illustrative cases of the three types are reported with typical audiometer curves.

COMMENT

The audiometer has become more necessary in the otologist's office everywhere in diagnosing reasons for impairment of hearing. We agree with the authors that a thorough history of the patient, direct inspection of all parts of the upper respiratory tract and the determination of the condition of those parts that cannot be seen by means of hearing tests are most necessary and that it is far better to make a test of the hearing before examination. We also agree that the type of audiometer used is not of as great importance as a comparison of frequent audiograms made with the same machine. It seems bromidic to bring out the fact that all tests of hearing should be made in a quiet room where extraneous noises do not interfere.

H. H.

Prophylactic Vaccination Against Intracranial Complications in Pneumococcus Type III Mastoiditis

J. L. Goldman, G. Schwartzman and C. Herschberger (*Archives of Otolaryngology*, 21:154-156, February, 1935) report that at the Mount Sinai Hospital, New York City, 27 cases of *Pneumococcus* type III mastoiditis were treated between September 1931 and March 1934. Of these 27 given forty-eight hours after operation, but had been given no vaccine, or only a single injection. The other 25 patients were given a full course of prophylactic vaccination with *Pneumococcus* type III vaccine, in six injections—two a week—with dosage increasing from 0.1 to 1 c.c. Of these 25 patients, one died five months after mastoidectomy; he had a recurrent mastoiditis (with *Streptococcus hemolyticus* in the pus) six weeks after operation, and three months later died of meningitis due to *Pneumococcus* type III. The other 24 patients made good recoveries with no postoperative complications; all were under observation for at least three months and remained well; 18 were traced after more than three months and were in good health. The mortality rate in the patients vaccinated was 4 per cent. In a previous series of 22 cases of *Pneumococcus* type III mastoiditis (1927-1931), 5 died of meningitis—a mortality rate of 22 per cent. While definite conclusions cannot be drawn from so small a group of cases, the results obtained in the vaccinated series, the authors believe, “warrant a report in order to stimulate further work along these lines.”

COMMENT

The investigations of this hospital are worth while considering. We have frequently encountered postoperative mastoid cases in which the wound does not heal properly. In some of these cases we have used various types of antiseptics locally, also local vaccines, with very fair results. But the suggestion made that the condition may be due to a pneumococcus is worth considering and a vaccine of this organism should be used in the type of cases mentioned.

H. H.

Cellular Character of One Hundred Temporal Bones

In a study of the cellular character of 100 temporal bones, E. F. Ziegelman (*Surgery, Gynecology and Obstetrics*, 60:582, February (A) 1935) finds that the mixed cellular type predominates, but that the petrosal tip is more frequently diploetic. In the mixed cell type, the diplo-pneumatic cell type is most prevalent. Studies of the surgical anatomy of these temporal bones indicates that the most prevalent route of invasion of the petrosal tip is from the mastoid by way of the posterior aspect of the pyramid; or it may occur by way of the peritubal or carotid canal directly from the middle ear. The peritubal cells serve as a route of evacuation rather than one of invasion to the tip. Surgically the logical approach for drainage of localized purulent pathological conditions in the petrosal tip is by way of the peritubal cells; and for osteomyelitis, a subdural approach either from the mastoid or directly by way of the middle fossa. Owing to the variability in the surgical anatomy of the temporal bone, clinical evidence, based on the pathology present, should be the guide to the type of treatment to be employed.

COMMENT

The interesting part of this article is the conclusion that the cells of the mastoid process frequently run in definite directions and this is particularly of importance where there is an infection of the petrosal portion. When one has established proper drainage, the infections in the deeper portions of the operative cavity will eliminate themselves.

H. H.

Aural Manifestations of Lipoid Granulomatosis of the Skull

F. L. Lederer, H. G. Poncher, and N. D. Fabricant (*Archives of Otolaryngology*, 21:27-40, January, 1935) report a case in a boy two years of age with a small lump on the forehead that proved to be lipoid cell granuloma xanthomatosis on biopsy. The swelling was reduced by Roentgen-ray therapy. Later a mass formed in the external auditory canal on the left side having the appearance of a fleshy granuloma, but biopsy showed a xanthomatosis similar to the previous lesion. Subsequently swell-

ings developed in the right parietal and occipital regions; all these lesions subsided under X-ray therapy. In a review of the literature the authors find that the ear is frequently involved in cases of xanthomatosis of the skull (in about 50 per cent. of cases). If the lesion appears as a polyp or granuloma, or as a subperiosteal abscess, surgical operation may be considered, but this is not indicated; X-ray treatment gives good results, as in the authors' case.

COMMENT

The condition of lipoid granulomatosis is extremely rare. We are glad to have it brought to our attention. One should take note of the fact that the author states that the ear is frequently involved in cases of xanthomatosis.

H. H.

Otitis and Mastoiditis Due to Tamponade of Posterior Nasal Fossa

Pinaud (*Revue de laryngologie, otologie, rhinologie*, 56:106-108, January, 1935) reports 3 cases in which tamponade of the posterior nasal fossa for severe nosebleed was followed by infection of the middle ear, in one case complicated by mastoiditis requiring operation. Some infection of the middle ear after tamponing of the posterior nasal fossa is not infrequently observed, and the mastoid is often involved to a greater or less extent. Such a complication is due to blocking of the Eustachian tubes and increase of the virulence of the organisms present in the nasopharynx by interference with normal drainage. The author advises that if tamponade of the anterior fossa is not sufficient to control nosebleed, and tampons must be placed in the posterior fossa, iodoform gauze be used, obstruction of the tubal orifice be avoided, and the tampon be left *in situ* not more than forty-eight hours.

COMMENT

It is surprising that infections of the Eustachian tubes and the middle ears do not take place more frequently from excessive tamponing of the nasopharynx, particularly when this is done for severe epistaxis. In most instances that we have encountered a packing of this kind has not only resulted in an acute ear condition but very often in a subsequent mastoid infection. It is seldom necessary, even in the extreme cases of bleeding, to pack the nasopharynx. Many of these patients are better off to continue to bleed from the nose until they have become sufficiently exsanguinated to bring about an anemia of the parts. If the cause of the nasal hemorrhage cannot be ascertained at once, it is often wise to take the blood pressure, and if this is excessive, to allow the patient to continue to bleed. A simple way to arrest such a hemorrhage is to wash out the nasal cavity with a very hot saline solution to which has been added a small amount of suprarenal extract. Packing of the nose or the nasopharynx very often makes the condition worse because it creates an excessive engorgement of the tissues.

H. H.

Neurology

The Cerebrospinal Fluid in Tuberculous Meningitis

Two studies on the cerebrospinal fluid in tuberculous meningitis have recently appeared. J. Gordon Clark (*Edinburgh Medical Journal*, 42:146-153, March, 1935) reports the results of examination of the spinal fluid in all cases of tuberculous meningitis admitted to the general medical wards of the Dundee (Scotland) Royal Infirmary in the last three years. In all these cases the diagnosis was confirmed by finding tubercle bacilli in the spinal fluid either by direct examination or by guinea-pig inoculation, or at autopsy. It was found that the spinal fluid in these cases was under some degree of increased pressure, sometimes marked. The fluid was clear in appearance as compared with that of purulent meningitis, but showed a slight turbidity; on standing in the test tube for a few hours "a thin delicate thread of fibrinous clot" formed; this clot formation was a constant finding in these cases. The cell count of the spinal fluid was always increased; with one exception, the cell count ranged from 70 to 500 cells; in

the one exception it was over 500 cells (1250). In patients under fourteen years of age the cell count was higher than in older patients. The predominating cell was the lymphocyte. The Lange colloidal gold test usually showed a meningitic curve. The Wassermann reaction was always negative. Chemically the protein of the spinal fluid was increased; but Fehling's solution was not reduced. The tubercle bacillus was found by direct examination of the sediment after centrifugalization in 50 per cent of these cases. Positive results were obtained by guinea-pig inoculation in all cases in which this test was made. The author is of the opinion that when tubercle bacilli cannot be demonstrated directly, the clot formation is the most valuable diagnostic finding in the cerebrospinal fluid in tuberculous meningitis.

H. H. Merritt and F. Fremont-Smith (*Archives of Neurology and Psychiatry*, 33:516-536, March, 1935) report their findings in 297 specimens of cerebrospinal fluid from 84 cases of tuberculous meningitis at the Massachusetts General and Boston City Hospitals. The cerebrospinal fluid pressure in these cases varied from 35 to 800 mm. with an average of 375 mm. There was a tendency for the pressure to increase with the progress of the disease. The fluid was clear, but usually slightly xanthochromic, and sometimes of a "ground-glass" appearance. A fine fibrin clot was noted in 43 per cent of fluids, and would undoubtedly have been found more frequently had fluid been regularly set aside for this purpose. The cell count ranged between 50 and 500 in 85 per cent of fluids, being over 500 in 9 per cent, and below 50 in 6 per cent. Lymphocytes predominated as a rule; there were only 16 showing a predominance of polymorphonuclear leukocytes. The protein content varied from 25 to 1,142 mg., being less than 45 mg. in only 1 per cent. The sugar content of the fluid was reduced, 93 per cent of fluids showing values below 50 mg. per 100 c.c., and 57 per cent below 30 mg. There was usually a progressive decrease in sugar content as the disease advanced. The chlorides were also reduced, being below 700 mg. in 100 c.c. in 97 per cent of fluids; and also showed a progressive decrease. The colloidal gold test showed mild "midzone" reaction in 71 per cent. The Wassermann test of the spinal fluid was made in 60 of the 84 cases and was positive in only 2 instances. Tubercle bacilli were demonstrated in stained smears of the clot or the centrifugated sediment in 30 (36 per cent) of the 84 cases. In 24 cases in which guinea-pig inoculation was done, results were positive in 22. The authors are of the opinion that the entire "syndrome" of the cerebrospinal fluid in tuberculous meningitis is highly characteristic, and rarely occurs in any other disease. "The determination of the cerebrospinal fluid pressure, cytology, protein, sugar, colloidal gold reaction and Wassermann reaction is necessary to establish the syndrome."

COMMENT

Careful perusal of these two papers reveals no essential difference. Both in effect emphasize the fibrin film formation in the spinal fluid which is allowed to stand. As noted, Clark makes it virtually diagnostic.

The American school places more emphasis on detailed chemical analysis of the various spinal fluid constituents, especially the spinal fluid sugar and chlorides. Since Tbc meningitis is universally fatal, the essential step is one of accurate diagnosis and prognosis. Also since Tbc meningitis is not immediately fatal, the continued examination of the fluid will differentiate it from other "lymphocytic fluids" with which it can be confused. Emphasis should not be placed on one constituent but on the entire spinal fluid picture. It is hardly necessary to say that the discovery of Koch's bacillus is diagnostic, but it is not found in at least fifty per cent of the cases. Consequently the picture presented by a typical fluid is very helpful. To quote from Merritt and Smith's paper, the typical fluid in tuberculous meningitis has the following characteristics:

1. The pressure is elevated (over 200 mm.).
2. The appearance is clear or like ground glass, colorless or faintly xanthochromic, and the fluid usually shows a delicate weblike clot.
3. There is an increase in white cells (from 25 to 500 cells per cubic millimeter); lymphocytes predominate.
4. There is an increase in the protein content (from 45 to 500 mg. per hundred cubic centimeters.)

5. The sugar level is decreased (below 45 mg. per hundred cubic centimeters.)
6. The chloride content is decreased (below 650 mg. per hundred cubic centimeters.)
7. The colloidal gold test shows a mild midzone reaction or no reaction.

The reviewer feels that the above tests at the present time are the "sine qua non" of a spinal fluid examination. In most cases the accurate clinical diagnosis is soon made, and with elaborate clinical laboratory data. In doubtful cases where we are dependent on careful laboratory assistance, the physician should insist on the above information. In the examination of cerebrospinal fluids, a modern hospital laboratory can not qualify as "up to date" unless it is prepared to perform all of the above minimal tests.

H. R. M.

Syringomyelia and the Formation of Cavities in the Spinal Cord

E. S. Tauber and O. R. Langworthy (*Journal of Nervous and Mental Disease*, 81:245-264, March, 1935) present a clinical and experimental study of syringomyelia and the formation of cavities in the spinal cord. They find little evidence to support the theory that the spinal cord cavities of syringomyelia are produced by the growth and subsequent necrosis of a glial tumor; the glial cells surrounding the cavity do not have the appearance of tumor cells, but rather that of a glial scar. Their experimental work indicates that cavities in the spinal cord similar to those found in syringomyelia can be produced by interfering with the arterial supply of the cord. Clinically it has been found—especially in cases studied during the World War—that cavities were produced by concussion without direct injury to the cord. Experimentally typical cavities in the spinal cord have been produced by the application of alternating electric currents with contacts at the head and tail of the animal. Such concussion, the authors maintain, with resulting arterial spasm causes a temporary diminution of the blood supply that affects "the relatively avascular portions of the spinal cord" first. Edema occurs in this central portion of the cord, the intact nerve tissue in the region is compressed and undergoes necrosis where the blood supply is impaired. If the individual survives glial cells proliferate and considerable scarring results. Syringomyelic cavities may also be produced by other lesions that interfere with the blood supply of the cord—as a tumor causing pressure.

COMMENT

The importance of this contribution is the emphasis it places on trauma as an important cause of the syndrome of syringomyelia. Hitherto, most authors, while mentioning previous concussion as a factor, have tended to belittle its importance. In a previous comment (*MEDICAL TIMES*, Dec., 1934), we drew attention to four cases of spinal cord concussion reported by Hassin, and also to work by Baldwin. Their work recognized that serious spinal cord disorders could be caused by trauma without demonstrable bony damage and gross pathologic changes in the spinal cord.

The present paper follows along this line of thought. Many cases of syringomyelia give a story of previous back injury. Because of the trend which emphasizes a congenital rest as being the basic cause little attention has been paid to the story of injury. Concussion as a factor in the production of syringomyelic disorders will have to be considered in a more friendly and favorable fashion as the result of this rather conclusive experimental work.

H. R. M.

Neurologic Aspects of the Epidemic of Encephalitis in St. Louis

J. W. Beckmann (*Archives of Neurology and Psychiatry*, 33:732-751, April, 1935) notes that in its epidemiological features the 1933 St. Louis epidemic of encephalitis resembled the Japanese type of encephalitis (encephalitis B) more closely than true epidemic encephalitis, except that the total mortality was lower. The neurological symptoms observed in the St. Louis epidemic and their usual sequence were as follows: 1. A prodromal period with lassitude, malaise, mild headache (accompanied sometimes by sore

throat or gastro-intestinal symptoms). 2. Myalgic and neuralgic pains. 3. Headache—frontal, parietal and occipital—becoming acute. 4. Rigidity of the neck, immobility of the dorsal portion of the spine and a Kernig sign. 5. Increase of deep reflexes, or no alteration in the early stage and subsequent suppression. 6. Moderately coarse tremors of the intention type in fingers, lips and tongue. 7. Some reduction in the size of the pupils. 8. Absence of abdominal reflexes. 9. Delirium, coma and stupor due to toxemia. 10. Disturbances of the vesical and rectal sphincters with subsequent retention. 11. Signs of involvement of the pyramidal tracts. 12. Involvement of the cranial nerves. 13. Late results such as paresis of extremities, hemiplegia, myalgia and neuralgia, fatigue reactions, mental disturbances. There were some abortive cases with few symptoms, often not diagnosed; and some mild cases showing only the first eight groups of symptoms. A follow-up of 1,097 cases in December, 1933, showed that about one-third had some of the late symptoms (Group 13) three to five months after the acute attack. Whether or not there will be permanent residuals as in typical epidemic encephalitis can be determined only by further follow-up.

Comparative Effects of Ergotamine Tartrate on the Arteries in Pia, Dura and Skin

J. L. Pool and G. I. Nason (*Archives of Neurology and Psychiatry*, 33:276-282, February, 1935) report experiments on cats in which the effect of ergotamine tartrate given intravenously on the arteries of the pia mater, the dura and the skin was determined. It was found that the drug so administered has no constant effect on the caliber of the pial arteries; causes constriction of the dural arteries, the decrease in diameter averaging 25 per cent; and also constriction of the arteries of the skin with an average decrease in diameter of 39 per cent. It was also found that ergotamine tartrate raises the systemic arterial pressure; raises or causes no change in the cerebrospinal fluid pressure, and a corresponding alteration in the venous pressure; and decreases the pulse rate. The authors note that "evidence from various sources" indicates that the headache of migraine may be caused, in part at least, by dilatation of the arteries of the dura. These experiments, therefore, suggest that the therapeutic value of ergotamine tartrate in migraine reported by several clinicians may be attributed to the dural vasoconstriction produced.

COMMENT

In 1918 the active alkaloid of secale cornutum known as ergotamine tartrate (gynergen) was isolated by Stoll. In 1926 Maier of Zurich first recommended its use in migraine, after numerous failures with other types of therapy. Darier had pronounced it to have a selective paralyzing action on the sympathetic nervous system, acting as an antagonist to adrenalin. In 1928 A. Tzanck (*Bull. et mém. Soc. méd. d. hôp. de Paris*) favored the use of ergotamine tartrate in migraine. Also favorable reports were given by K. Klottman (*Schweiz. med. Wchnschr.* June 10, 1933). Papers on the use of this substance were abstracted in some detail in this journal in April, 1935. All experimental workers look with favor upon its use and recommend its trial.

This paper offers adequate experimental explanation for the apparent relief of the migraine seizure following the administration of gynergen.

The reviewer has used it with some success in vague neuralgic pains about the face and head. In one instance a chronic "supraorbital neuralgia" obtained startling relief. Its use is recommended.

H. R. M.

Physical Therapy

Treatment of Gonorrheal Arthritis by Electropyræxia

R. F. Atsatt and L. E. Patterson (*California and Western Medicine*, 42:94-97, February, 1935) report the treatment of gonorrheal arthritis with hyperpyrexia induced by a diathermy unit, with the patient's body in a hot air cabinet. The hot air cabinet is of value to maintain the temperature of the patient after the diathermy current is turned off. The electrodes used consist of simple unfenestrated block tin; they are applied over a one-quarter inch absorbent

pad moistened in normal saline, by means of a canvas corset. A light narcosis is induced with dilaudid and scopolamin about twenty minutes after beginning treatment to reduce the patient's discomfort and prevent restlessness. Pulse, rectal temperature, and respiration are recorded every fifteen minutes and oftener as treatment progresses. In the initial treatment, a gradually increasing amount of current is released until the optimum milliamperage for the patient is determined that will raise the temperature 0.8 to 1.0 degree every fifteen minutes. A temperature above 103.5° F. is maintained for two to four hours. Then the electrodes are removed from the head end of the cabinet without exposing the patient; and the cabinet is removed when the temperature has fallen to 100° F. Treatment is discontinued if signs of circulatory collapse—increasing pulse rate, rapidly falling blood pressure, facial cyanosis—develop. The authors have used this method with good results in a number of cases where fever therapy is indicated. In a series of 250 treatments they have had but one slight burn, and patients rarely complain of hot spots. Recently they have treated a small series of cases of gonorrheal arthritis by this method since heat is known to be injurious to the gonococcus. Of 9 cases of gonorrheal arthritis treated, 8 had acute symptoms; 7 of these acute cases were completely relieved of the arthritic symptoms by one to five weekly treatments. In the chronic case, swelling and pain were relieved, but complete restoration was impossible because of definite joint destruction as shown by the roentgenogram. In the acute cases with urethral or vaginal discharge, the discharge ceased and smears became negative during the course of treatment.

COMMENT

The treatment with hyperpyrexia, utilizing a diathermy unit with the patient in a hot air cabinet to maintain elevated temperatures for desired periods, seems practical and efficient. However, this method is only one of many that have been used in the treatment of gonorrheal arthritis with hyperpyrexia. The moistened absorbent pad held by means of a canvas corset has been known to cause hot spots and superficial burns and is therefore not entirely satisfactory at all times.

C. R. B.

Treatment of Chronic Pharyngitis by The Cold Quartz Lamp

J. D. Hindley-Smith (*British Journal of Physical Medicine*, 9:210-213, March, 1935) reports the treatment of chronic pharyngitis with predominance of streptococci in the throat cultures by means of the cold quartz lamp. Previously he treated these cases with a Kromayer lamp with special quartz applicators, but finds the newly designed cold quartz lamp "an ideal instrument" for this purpose. This lamp delivers ultraviolet radiation in the region of 2537 Å. U.—rays that are both bactericidal and penetrating. The quartz tube is not heated above body temperature, and therefore can be applied directly to the part to be treated. In beginning the treatment of a chronic pharyngitis with chronic catarrh, treatments must be given daily. The throat and nasal passages must first be cleansed by irrigation through the nasal passages, using a non-irritating solution of correct osmotic tension. Then the throat is treated using an inverted U-shaped quartz tube; and then the nasal passages, using a special Y-shaped tube for post-nasal treatments. The duration of the first treatment does not exceed twenty seconds, which is gradually increased to five minutes. After the dose has been raised to a minute, treatments are given at first every three days, and then twice weekly. Two months are required to reach the maximum dose, which may then be continued once or twice a week as indicated. The author has found that by the end of the third month the percentage of streptococci in the cultures is reduced from 60 or 70 to 10 or 15 per cent; and there is a striking improvement in clinical symptoms, with relief of irritation, catarrh and mucous secretion, and cough.

COMMENT

The use of the cold quartz lamp in the treatment of streptococcal infection of the throat and nasal passages by quartz tubes does not entirely replace quartz applicators on

a Kromayer lamp. The fact that the quartz tube is not heated above body temperature and can be applied directly to the part to be treated holds true in the quartz applicators on the Kromayer lamp and therefore no superiority of the cold quartz lamp can be claimed over the Kromayer lamp.

C. R. B.

Therapy With the Cold Quartz Lamp in Dermatology

C. S. Wright (*Archives of Dermatology and Syphilology*, 31:374-383, March, 1935) notes that the cold quartz lamp has a constancy of output that "makes possible an accurate estimate of dosage." He has treated 180 cases of various skin diseases with this lamp. Ninety-four of these were acne vulgaris, in which good results were obtained; most of these patients had been previously treated with Roentgen irradiation or were given Roentgen irradiation conjointly. In the cases treated with the quartz lamp alone, a larger number of treatments were required. In most cases, the patients were freed from lesions and the degree of scarring was lessened. Other skin conditions that responded well to the cold quartz lamp treatment are: Acne rosacea, various types of alopecia, eczema of the dry, squamous and thickened type (not vesicular eczema), and a few cases of psoriasis and molluscum contagiosum. The rays of the cold quartz lamp cause erythema and desquamation, even with small doses, but no appreciable pigmentation of the skin. The author is convinced that cold quartz ultra-violet irradiation is of definite value in a number of skin diseases, but it should not be used in conditions that are unfavorably affected by sunlight.

COMMENT

The effective use of the cold quartz lamp irradiation in a group of various skin diseases, ninety-four of which are acne vulgaris, with good results, is a notable achievement. It is noted that most of these cases had been previously treated or received Roentgen irradiation conjointly; it therefore seems reasonable to attribute the success to combined irradiation effects rather than a cold quartz lamp irradiation alone.

C. R. B.

Radiotherapeutic Treatment of Hypertension and Diabetes

J. H. Hutton (*Radiology*, 24:330, March, 1935) briefly reviews the evidence in favor of the theory of the interrelationship of the pituitary and the adrenals, and the influence of these glands on blood pressure. On the theory that "the pituitary body and the adrenals, by some spontaneous dysfunction, probably a hyperfunction, set up abnormal arterial tension," the author has treated 123 cases of essential hypertension by Roentgen irradiation of the pituitary and the adrenals. The author has found the most satisfactory dosage to be 120 K. V., 5 Ma. with 2 mm. aluminum filter, delivering a dose of 106.4 r units to the pituitary and 133 r units to the adrenals. From two to twelve treatments have been given. Of the 123 cases of essential hypertension treated, 7 could not be traced; 20 were not improved; and 96 showed definite improvement with reduction of blood pressure and relief of symptoms. The symptomatic relief in these cases was much more striking than the reduction in blood pressure and was often obtained before any marked reduction in blood pressure occurred. In addition 12 cases of coexisting diabetes mellitus and hypertension have been treated by the same method; 5 of these patients were relieved of both conditions, i.e., rendered sugar free and blood pressure reduced. In others there was considerable increase in carbohydrate tolerance, without any change in blood pressure; smaller doses appeared to be required in diabetics. This form of treatment is not indicated in patients with nephritis or arteriosclerosis; careful individualized supervision of each case is essential.

COMMENT

The treatment of essential hypertension cases by Roentgen irradiation of the pituitary and the adrenals is

a new field of endeavor worthy of further investigation. The effects of Roentgen irradiation with co-existing diabetes mellitus and hypertension offer much for those sufferers.

C. R. B.

Roentgen Treatment of Carbuncles

W. B. Firor (*American Journal of Roentgenology*, 33:71-74, January, 1935) reviews the literature on the Roentgen treatment of carbuncles and reports the treatment of 56 cases in his own practice in the last three years. His results fully substantiate other "enthusiastic reports" in the literature. In most cases a small incision was made to establish drainage, but "not infrequently" the lesion opened spontaneously, drained freely and healed well after Roentgen irradiation alone. Initial doses of 200 to 250 r units have been found as effective in most instances as larger doses of 300 to 400 r units, but the penetration, filtration and total dosage must vary with the location, extent and duration of the lesion. The author maintains that the value of Roentgen-ray treatment in carbuncles has not been "adequately stressed."

COMMENT

The value of Roentgen-ray treatment in carbuncles and associated inflammation has been known for some time. We agree that effects have not been stressed sufficiently.

C. R. B.

The Flasher Sinusoidal Machine

J. Weiss (*Archives of Physical Therapy*, 16:95-96, February, 1935) notes that machines to deliver "low volt" currents have been in use for several years that are simple combinations of "vacuum tubes, transformers and one or more thermal flashers." The latest models of this sinusoidal generator are adapted to be used in conjunction with the diathermy current when desirable. This combination has been found especially useful in treating damaged muscle following disease or injury. The diathermy is applied as usual; then the sinusoidal current, which is connected in the same circuit, is added only during the last few minutes of the diathermy treatment. Thus the muscle is stimulated gently while in a state of active hyperemia induced by the diathermy. The sinusoidal generator can be used alone in conditions where diathermy is not indicated. It has been found especially useful in treating children and nervous patients as it is silent and "quite proof against shock or accident."

COMMENT

The combined sinusoidal and diathermy generator seems practical enough but the author does not state specifically what clinical cases are benefited by the treatment of damaged musculature following disease or injury, especially children and nervous patients.

C. R. B.

Carbonic Acid Baths and the Circulation

I. M. Scribner (*Acta medica Scandinavica*, 84:602-613, March 6, 1935) reports a study of the effect of carbonic acid gas baths on the circulation in patients with circulatory disorders. The baths used were sea water saturated with carbonic acid gas at a pressure of $1\frac{1}{2}$ atmospheres and temperature of 33 to 34° C. It was found that the baths were followed by an increase in the minute-volume of the heart, an increase in the total volume of blood, a vaso-dilatation, and a more rapid circulation of the blood. All these factors favor an abundant supply of oxygen to the tissues and thus the restoration of normal cellular metabolism; and especially the metabolism of the cardiac muscle; and this in turn increases the functional activity of the heart and thus acts favorably on the circulation. In this way carbonic acid baths act favorably on two factors in circulatory diseases—the defective circulatory "dynamics" and the disturbed cellular metabolism.

Public Health, Industrial Medicine and Social Hygiene

Preparation of Antismallpox Vaccine By Culture of the Virus

E. W. Goodpasture and his associates at the Vanderbilt University Medical School (*American Journal of Hygiene*, 21:319-360, March, 1935) describe their method for the culture of the smallpox virus in the chorio-allantoic membranes of the chick embryo and the preparation of a vaccine from the "lesions" so produced. Lesions removed from the egg are tested bacteriologically, and only the sterile ones are employed for the production of the vaccine. Animal experiments showed that the chick vaccine had an antigenic capacity similar to that of calf vaccine. In a trial of the chick vaccine for human vaccination, 1,120 persons were vaccinated, including 978 primary vaccinations. In this group of primary vaccinations there were 93.6 per cent. positive reactions. Immune reactions occurred in persons who had been previously vaccinated or who had had smallpox. Combining the positive and immune reactions in the total series of vaccinations (1,120), there were 94.4 per cent. positive and 5.5 per cent. negative reactions. This percentage of positives is comparable to that obtained with commercial calf vaccines of good quality. A follow-up of the cases vaccinated showed that there had been no complications or sequelae of any kind, and that as a rule the reaction with the chick vaccine was somewhat milder than with calf vaccine. This method, the authors believe, gives a vaccine entirely free "from micro-organismal and viral contamination," of high potency, that can be prepared "by any careful laboratory worker, on a scale suitable for general human immunization."

Food Handlers and the Epidemiology of Amebiasis

H. G. Johnstone and M. K. Iverson (*American Journal of Tropical Medicine*, 15:197-207, March, 1935) note that investigations of the prevalence of *E. histolytica* infection among food handlers in various communities show a considerable variation in the percentage of infections found; in a Chicago hotel, 7.1 per cent. of food handlers were found to be infected, while in other groups, the percentage has been between 2 and 3 per cent. The authors report a survey of food handlers in San Francisco hotels, clubs and cafeterias and in one hospital and one health home—a total of 747 persons. Stools were examined on three successive days. There were 22 persons, 2.94 per cent. of those examined, found to be infected with *E. histolytica*; mobile forms of the ameba were not found. A study of a few family groups indicated that *E. histolytica* infection may spread through a family and several members of a family may become carriers without symptoms of amebiasis. The routine examination of all food handlers for *E. histolytica* infection is impractical; such examinations should be made in communities or groups where the epidemiological evidence indicates that food handlers may be a source of infection. Additional surveys in various types of eating places are also desirable to determine the importance of food handlers in spreading amebiasis, especially in relation to other modes of transmission, as this is a question that has not been definitely settled.

Potential Problems of Industrial Hygiene In an Industrial Area

J. J. Bloomfield and W. S. Johnson (*American Journal of Public Health*, 25:415-424, April, 1935) report a survey of the industrial accident and disease hazards in a typical industrial area in the United States, covering 26,686 workers in 615 plants. It was found that 41 per cent. of the workers were exposed to accident hazards from unguarded moving machinery, 13.2 per cent. to "floor hazards," and 7.5 per cent. to eye injuries from flying particles. A study of the occupational exposure to various materials and conditions that are potentially injurious, shows that 7,862 workers (27.4 per cent.) were exposed to inorganic non-metallic dusts, 19.3 per cent. to carbon monoxide, and 10.2 per cent. to lead

compounds. In certain industries, the exposure to metallic dust, especially emery dust and quartz dusts, ranked high. It is apparent that dusts of various kinds are the most important materials of industrial hygienic significance, with carbonic monoxide and lead compounds closely following. Statistics show that in the United States, as a whole, the largest number of cases of occupational poisoning have been due to these same materials. A considerable percentage of the larger plants included in this survey had "safety directors," plant physicians or nurses, but these are not usually found in the smaller plants; and nearly 50 per cent. of the workers in this survey were employed in the smaller plants. The authors consider that it is impossible, therefore, for industry itself to solve the occupational disease problem. Industrial hygiene is "a major public health function, affecting directly the health of a large population and indirectly the well-being and economic status of the entire community."

COMMENT

The work of Bloomfield and Johnson is important as defining clearly the nature of the problem of industrial diseases and hazards. Not everyone, however, will agree on the basis of the evidence presented that it is impossible for industry itself to solve the problem.

W. C.

Lanolin as a Protective Measure Against Mineral-Oil and Tar Dermatitis and Cancer

C. C. Twort and J. M. Twort (*Journal of Hygiene*, 35:130-149, February, 1935) report animal experiments in which the effectiveness of various ointments as a protection against mineral-oil and tar dermatitis and cancer were tested. It was found that a mixture of anhydrous lanolin with about equal parts of olive-oil was the most effective in protecting the animals against mineral-oil. This mixture did not prove effective with gas tars in some experiments (as, for example, when it was mixed with the tar), but when the experimental conditions conformed more closely to those prevailing among tar workers, it had a definite protective action. More lanolin is required to protect against gas tars than against toxic oils or synthetic tars. On the basis of these findings, the authors recommend that all workers exposed to mineral oils and tars should rub into all the exposed surfaces a small quantity of a mixture of anhydrous lanolin and olive-oil, before commencing work. After work the soiled parts should be washed with soap and water and thoroughly dried; a small quantity of lanolin ointment may then be used again if desired.

(Continued in July issue)



ASSOCIATED PHYSICIANS OF LONG ISLAND

June Outing of the Associated
Physicians of Long Island,
Bay Shore, L. I. Tuesday,
June 25th.

The June Outing of the Associated Physicians of Long Island will be held Tuesday, June 25th, with a scientific session at Southside Hospital in Bay Shore and sailing parties on Great South Bay and golfing and dinner at the Timber Point Club in Great River.

While it is customary to emphasize the outing features of the June meeting, Dr. Jefferson Browder has arranged a powerful program at the Southside Hospital for scientific discussion as follows:

1. Committured Fracture of Left Humerus with Early Arthroplasty
by Dr. A. M. Baker
discussion opened by Dr. Herbert C. Fett
2. Gastrectomy for Carcinoma of Stomach
by Dr. C. C. Murphy
discussion opened by Dr. E. R. Hildreth

3. Hemolytic Icterus of Acquired Type

by Dr. D. L. McDonell

discussion opened by Dr. C. A. Weymuller

4. Encephalitis, of Hyperkinetic Type (only case reported to live)

by Dr. W. N. Eller

discussion opened by Dr. O. C. Perkins

5. Radium Application for Carcinoma of Cervix

by Dr. B. Feuerstein

discussion opened by Dr. T. S. Welton

As for the outing itself, Dr. Charles Anderson will have enough motorboats ready to take members for a trip on Great South Bay. There will be a definite announcement made in the folder which will be mailed three weeks in advance of the outing in which the time will be set for a fishing party which will take into consideration the tide schedule. The bay is beautiful in June, the days are long and not too hot, and a boat ride can be a thing of great pleasure. Dr. Anderson will try to have the fish on a diet which will make them glad to jump eagerly at the hook.

Timber Point Golf Club speaks for itself as a sporty but not too difficult course. It has only recently been open for outings of this nature and should be a new experience for most of our members. Golfers will be promised worth-while opportunity to display their prowess amid very pleasant surroundings.

The dinner will be held in the Timber Point Golf Club House and we will only intimate at this time that its chef is rapidly becoming celebrated. Members of this association will have to attend this dinner to appreciate it. June 25th comes pretty close to the longest day in the year, so dinner will be scheduled about 7:30 P. M. and fishing and golf can be completed in time for the dinner.

It is always the attempt of the entertainment committee to assemble a program with something for everybody. June 25th will be a long day and the scientists are assured of a strong program of papers which will appease their passion; the devotees of the old Scotch game can find no more fun than that which Timber Point provides; seafaring men are going to be sent out in motorboats to collect their ultraviolet rays and whatever fish they can seize; gourmards—and we do have a delegation of them—are going to indulge their appetites with equal opportunity to toast the president as frequently as they desire; and lastly, there is no finer spot on the island for the rocking-chair brigade to do its reciprocation and yarn-spinning.

It is proposed that members who will drive out to Bay Shore in their cars shall communicate with Dr. Charles Anderson or Dr. Herbert Fett if they have room for additional passengers. Some members always go to such outings by train because nobody offers them a ride. This request is therefore made to add to the pleasure of those few members, for a ride down the island in June is a thing of beauty in itself.

The work of the Association is maintained on a very close budget. IF YOUR 1935 DUES HAVE NOT BEEN PAID SEND YOUR CHECK PROMPTLY. We would remind you that you are receiving the MEDICAL TIMES AND LONG ISLAND MEDICAL JOURNAL as a part of your membership.

Have you invited a colleague to join? We are desirous of widening our circle of fellowship. Get some of your friends to affiliate and attend the meeting and dinner and participate in the fine time we have when good fellows get together.

Treatment of Diabetes with Insulin (After Ten Years): Contrasting Effects of Normal and of Older Diabetic Diets

H. RAWLE GEYELIN, New York (*Journal A. M. A.*, April 6, 1935), summarizes the results of treatment in a group of 150 cases of diabetes treated with insulin and a high carbohydrate diet during the past ten years. Patients treated with high carbohydrate-low fat diets achieve greater effectiveness of insulin as judged by the ratio of units of insulin to grams of carbohydrate oxidized. The administration of such diets overcomes hypercholesterolemia. In the majority of instances, blood sugar levels are reduced after the administration of high carbohydrate diets. Hyperinsulinism is less common and less severe.

Editorials

Fielding H. Garrison

In the death of Colonel Garrison on April 18, at sixty-four, American medicine loses its outstanding historian.

Colonel Garrison was assistant librarian in the Surgeon General's Office from 1889 to 1922, librarian of the Welch Medical Library, in Baltimore, since his retirement from the army in 1930, consulting librarian for the Library of the New York Academy of Medicine, compiler of official data on the history of the World War, and author of that scholarly, charming, and incomparable work, *An Introduction to the History of Medicine*.

We owe especially a lasting indebtedness to him in respect of the History. Whoever is under the impression that medical history is dry stuff should dip into that book and wonder at its sweep, its cultural mastery, and its marvelous integration of medicine with other arts and sciences and with other annals—a veritable cavalcade of the life of man down the ages, touching medicine at all points and fascinating the reader with its brilliant technic and its exhaustless stores of learning. By it all future productions in this field will have to be judged. To describe the effect upon the physician who, for the first time, makes the acquaintance of Garrison's book, one is forced to fall back upon those lines of Keats in which the poet describes the effect upon that Spanish conquistador who, from a peak in Darien, first gazed upon the Pacific.

The Relation of Economic Decency To Public Health

What Professor Sheldon Glueck of Harvard University aptly calls "economic cannibalism" will yet have to take account of itself if the social set-up is to improve much, and this means health problems as well as crime and delinquency. The level of economic security determines these things. Unless the capitalistic régime is to be scrapped there must be, says Professor Glueck, a fairer distribution of the joint product of capital, labor and management through taxation and indirect redistribution of excess profits.

"Limitless greed" and "lawless and unjust competitive practices," in other words, economic cannibalism, must be suppressed if we are to get much further in our public health programs.

Why, asks Professor Glueck, cannot our business men adopt a set of ethical principles in harmony with the poignant cry for social justice before the capitalistic system consigns itself to the dust-bin of history?

Heretofore, when faced by a malnourished child, famishing in a slum for want of milk, our alibi has been that its parents must have fallen by the wayside "because of their own shortcomings and

not because of the shortcomings of the system." That is pure baloney today and what child ever was *itself* responsible for such a predicament? There was never any *good* reason, under capitalism, for such a situation. Why the hell should it be tolerated anywhere now, with our economy of abundance?

Grecians

Whom the Lord loveth He chasteneth. There is much tragedy in the position held by many of the leading men in the profession, who now find themselves in a difficult and unprecedented economic set-up. These men are still young, still vigorous, and with successful careers behind them; in fact, many of them are subsisting today, in part, upon the fruits of past success. They are busy enough, and more capable than ever, but the emoluments of private practice are not what they used to be. Surgeons and gynecologists who were earning very large incomes a few years ago are now at their wits' end—and nearly at the end of their purses. Only one thing more remains of the chastening discipline—the taking of their sons by war. Yet even that would not ruin character so finely developed through the years. Fate is either defied by them or accepted in the best spirit of the Greeks.

Elimination of a Possible Factor in Pyloric Stenosis

William Snow and Charles S. B. Cassasa, in the *Journal of the American Medical Association* of April 20, 1935, report their success in getting rid of gas (swallowed air) trapped by fluids in the distal end of the stomach of infants, recognized as a cause of colic during the first months of life, through postural treatment. They kept fifty newborn infants in the semi-inclined position and proved roentgenographically that the gas bubble was enabled to escape through the esophagus. When infants lie horizontally on their backs the entrance of the esophagus into the stomach is on a lower level than the exit through the pylorus.

We venture to suggest further that this postural treatment of all infants might result in a lower incidence of pylorospasm, which may be conceived of as in part a projectile effort to deal with gas which cannot be passed into the esophagus in normal fashion. So also in the prevention and treatment of pyloric hypertrophy and stenosis we may expect benefit from Fowler's position.

Keeping Up with the Joneses

After all, when one has completed one's general physical examination of John Jones, and found him "healthy" and without any obvious defects, how

does one know how well a second degree burn on his leg would heal? How does one know how well he would withstand a Type III pneumonia?

We know very little, fundamentally, about the Joneses until we have observed their reactions to illness.

The Art of Therapy

There are many points at which the laboratory and the clinic part company. This is very strikingly seen at times in the field of therapy. One is told, for example, by research workers, that the physiologic effects of erythrol tetranitrate upon blood pressure are too evanescent to account for alleged therapeutic results; and yet we get those results at the bedside or in the office frequently enough to justify amply the use of the drug; for example, nocturia due to hyperpiesis may frequently be desirably and harmlessly reduced by it. Or else the laboratory tells us that there is nothing in the constitution or behavior of potassium chlorate to account for the wise—and somewhat old-fashioned—clinician's reliance upon it in certain superficial mouth lesions for results more prompt than are given by other agents; well, the clinician gets the desired results. So the art of therapy is oftentimes something apart from the findings of the laboratory scientist. We are not trying to say that the therapist is a law unto himself, but only that, in his way, and in the interest of his patient, he is an artist who is altogether pragmatic where the utilization or non-utilization of laboratory law is concerned.

Cancer Fantasies

Cancer appears to be relatively uncommon in tropical countries and many reasons have been ascribed for it. The theorists have toyed largely with the idea of low animal protein in the diet—notable in the case of Africans and Indians—and some of the fantastic schools of treatment have owed their genesis to this naive notion. One in particular, in the City of New York, under quasi-respectable auspices, was once a source of much annoyance to the medical profession. The truth is, as recently emphasized by Swan, of Rochester, that the average duration of life in many tropical countries is short. They don't live long enough to acquire cancer. As Swan says: "If in Africa a native lives to be gray-haired, he is looked upon as a sort of a god because he has been able to live through the various circumstances that have shortened the lives of other members of the tribe."

A vast deal of nonsense has had to be discredited and discarded in the course of progress in the field of cancer—probably more than in any other domain.

Resistance

It is commonly assumed that the teaching of medical truths or the bringing of medical aid to the individual and the public is merely a matter of

good presentation or application on the part of the teacher or practitioner and of a spirit of acceptance on the part of the recipient or recipients. The good quality of the teaching seldom varies but the spirit of acceptance is by no means always present. Indeed, what is not taken into account sufficiently in assaying our results is the spirit of *resistance* in many people. Stern of Columbia University has written an excellent book on the subject of resistance of this sort. Very often this resistance is not to be overcome. It is by no means necessarily associated with ignorance; on the contrary, it may be motivated by apparently laudable emotions and a high degree of intelligence. It is often cleverly rationalized intellectually. In saying this we are not depreciating that which is offered. Very often the better it is the more vigorously it is rejected. Dr. Oliver Wendell Holmes's able efforts to introduce cleanliness into the lying-in chamber were bitterly resisted. This is perhaps as good an instance as could be cited of a reasonable and sound proposal, attractively presented by a gentleman of great charm and tact, and vast literary ability, being utterly and contemptuously rejected by the world.

When we speak about failure to distribute fully the present-day resources of medical science and art this resistance must be borne in mind. Our critics never think of it.

Sodium Ricinoleate

Sodium ricinoleate is one of the soaps of castor oil. It is being used in medicine more extensively and at the moment there seems to be varied opinions as to its value. Myers *et al* (*Jour. Lab. and Clin. Med.*, 19: 462, 1934) believe that any action of the drug administered orally would seem to be limited to the intestinal canal. Kolmer in the same publication (19: 972, 1934) states that sodium ricinoleate (soricin) is of interest because of the possibility of inactivating toxins and other bacterial agents in the blood. He finds that the drug is of very low bactericidal activity in the test tube and that it is without demonstrable curative activity in severe streptococcal, pneumococcal and tuberculous infection of the lower animals as well as in experimental trypanosomiasis of rats, syphilis of rabbits, and acute anterior poliomyelitis of monkeys.

The effects of sodium ricinoleate by mouth for gastro-intestinal disorders have been studied by several observers, among them Myers *et al* (*Jour. Lab. and Clin. Med.*, 19: 468, 1934). These authors do not find that the drug in accepted clinical dosage alters the intestinal flora. All types of bacteria grew as readily during the administration of sodium ricinoleate as before. The ratio of gram negative to gram positive organisms was not changed. They suggest that larger doses of the drug might be effective.

Burger (*ibid.*, 19: 234, 1933) has made quite extensive clinical investigations and believes that soricin is of definite benefit in the treatment of irritable colon, that there is no decrease in the skin sensitivity to bacterial vaccines following treatment with soricin, and he is inclined to support the theory of Dorst and Morris (*Am. J. M. Sc.*, 180:

650, 1930) that soricin neutralizes bacterial toxins *in vivo*.

Burger gave 5 to 30 grams of soricin four times a day. The drug was well tolerated in a great majority of the patients. The capsules were administered before meals and at bedtime.

Perhaps this is the detoxifying agent in castor oil. It is worth a trial in clinical medicine, especially in cases of belching where there are definite fermentative changes. Some observers are using a one per cent solution as a colonic irrigation while the drug is also being administered by mouth.

M.W.T.

Correspondence

From Our Washington Correspondent

What a queer combination Washington is, especially the outskirts of this fascinating town! One can wander through the halls of Congress (spectators are no longer permitted in the gallery for fear of diverting the eloquent speakers from their real business), study Shakespeare in the Folger Library, visit art galleries and museums, and in a few minutes jump to a country village and see pictures of aged couples, holding hands and surrounded by their families. Speaking of families, we have just received a death notice of a Yale classmate who passed over at eighty, leaving three sons, five daughters and twenty-three grandchildren (!). Evidently he did not believe in birth control.

What became of the cult of spiritualism, which flourished in Boston in our Harvard days? We were familiar with the vague statements of Oliver Lodge, Conan Doyle and other strong believers in spirits, and actually saw Doyle's demonstration of ectoplasm in a movie. "All, all are gone, the old familiar faces." The fact that one does not hear of séances in Washington is a proof that if they are still staged the believers must be few and far between.

As to medicine, we are keeping abreast of the times, as the writer is a member of a flourishing gynecological society, and then some. We do not depend on radio talk by eminent New York specialists, having plenty of them right here. There is a movement on here to make Washington a medical center, including all hospitals and medical schools. We think that we are going to put something over on New York.

As to lawyers—they flood the market. Theologians of every creed have their messages—from Father Coughlin to X-Science ministers.

The press is a mighty engine here, but rather loose in the joints. This place swarms with newspaper men, to whom nothing is sacred—the White House or the privacy of family life. Each newspaper man now carries a camera.

H. C. C.

News and Notes

Medical Library Association

The Thirty-seventh Annual Meeting of the Medical Library Association will be held in Rochester, New York, June 17th and 19th, 1935. Sessions will be held at the Rochester Academy of Medicine and the University of Rochester Medical School.

The program includes addresses, round table discussions and demonstrations on Library procedure, medical history and medical literature.

The Association is being represented by two delegates at the Congress of the International Federation of Library Associations to be held in Madrid May 19th to 30th. These delegates will return in time to report upon the Congress at this meeting.

This Association consists of about 175 of the medical libraries of this country and Canada, together with their librarians and a group of supporting members of physicians

interested in the advancement of medical libraries.

The officers of the Association are as follows:

Charles Frankenger, President, Brooklyn, N. Y.; Louise Ophüls, Vice President, San Francisco, Cal.; Frances N. A. Whitman, Secretary, Boston, Mass.; Mary Louise Marshall, Treasurer, New Orleans, La.; Marjorie J. Darrach, Chairman of Executive Committee, Detroit, Mich.

All interested in the development of medical libraries are invited to attend.

The American Neisserian Medical Society

All who are interested are cordially invited to attend the annual meeting of the American Neisserian Medical Society to be held on June 11, 1935, at the Claridge Hotel, Atlantic City, N. J.

American Public Health Association

The 64th Annual Meeting of the American Public Health Association will be held in Milwaukee, Wisconsin, October 7-10, 1935. This organization is a society of 4,500 professional public health workers whose annual sessions review developments in health protection and promotion and outline plans and policies for future advances.

Several related organizations have announced that they will meet simultaneously with the American Public Health Association at Milwaukee. They are:

American Association of School Physicians
International Association of Dairy and Milk Inspectors
Conference of State Sanitary Engineers
International Society of Medical Officers of Health
Association of Dairy, Food and Drug Officials
Conference of Wisconsin Health Officers
Conference of State Laboratory Directors
Association of Women in Public Health

So-Called Hemorrhagic Encephalitis and Myelitis

Conclusions. 1. The mortality of cases with central nervous system involvement secondary to intravenous injection of arsphenamin is about 76%.

2. There is approximately 1 death due to central nervous system involvement in every 5398 cases treated, and in every 28,768 injections.

3. The term, "hemorrhagic encephalitis," is not adequately descriptive.

4. The toxic reaction may occur in non-luetic cases, is not related to the quantity of the drug given, nor the number of injections, nor the toxicity of the drug itself. It is not related to the age of the patient nor the sex. It occurs most frequently after the 2d dose, though it has been reported as occurring after the 15th dose. Furthermore, cases have been reported where the drug has not at first produced toxic effects, but when again given several years later toxic reactions resulted. The symptoms may occur from 12 hours to 70 days after the injection, but usually develop from 12 to 144 hours.

5. The outstanding symptoms are headache, vomiting, nervousness, chills and dizziness, with physical signs of fever, cyanosis, respiratory and pulse changes. The outstanding neurologic signs are convulsions, unconsciousness, pupillary and ocular muscle changes, reflex changes, loss of sphincter control, mental disturbances, hemiparesis and rigidity of the neck. Laboratory reports indicate the presence of an acute nephritis in a relatively large percentage of the cases as well as an increased spinal fluid pressure.

6. Myelitis and encephalomyelitis may also occur, while meningitis may coexist.

7. This toxic reaction is diffuse rather than focal, as pathologic reports and clinical findings indicate involvement of the other organs. The clinical diagnosis is derived from the organ indicating the greatest involvement, *e. g.*, if the brain shows predominating clinical signs, it is an encephalitis; if it is the cord, it is myelitis; if the liver, a hepatitis.

Blood chemistry does not help very much in early diagnosis of kidney disease. The urine concentration and dilution tests are much better indices of kidney disturbances.

MEDICAL BOOK NEWS

Edited by TASKER HOWARD, M.D.

All books for review and communications concerning Book News should be addressed to the Editor of this department
1313 Bedford Avenue, Brooklyn, New York

JUNE, 1935



CLASSICAL PARAGRAPHS

In writing, therefore, a history of diseases, every philosophical hypothesis which hath prepos-
essed the writer in its favour, ought to be totally laid aside, and then the manifest and natural
phenomena of diseases, however minute, must be noted with the utmost accuracy.

Thomas Sydenham: *The Works of Thomas Sydenham, M.D. on Acute and Chronic Diseases; wherein their Histories and Modes of Cure, as Recited by him, are Delivered with Accuracy and Perspicuity with a Variety of Annotations by George Wallis, M.D., London, G. G. J. and J. Robinson, 1788.*

Psychotherapy

PSYCHOTHERAPIE, Ein Lehrbuch für Studierende und Ärzte.
By Dr. Heinrich Kogerec. Wein, Wilhelm Maudrich, 1934. 8vo.
162 pages. Cloth, RM. 10.

The author has been associated with Dr. Von Jauregg and has had charge of the Psychotherapeutic Clinic connected with the University of Vienna. He has written a book based upon his own experience with the various types of patients requiring psychotherapy. In the manuscript he describes the development of the Psychotherapeutic Institute of Vienna, and the role which he played in its development. He gives a brief outline of the history of psychotherapy, and describes the qualifications of the physician engaged in psychotherapy. The causes of mental disturbances are outlined and the general and special symptoms are described. A chapter on Social Psychotherapy completes the volume. As a whole the book is well written and is illustrated with sixty-three brief case histories. The book should prove of interest to those who are engaged in the broad field of psychotherapy.

I. J. SANDS.

Advances in Eugenics

A DECADE OF PROGRESS IN EUGENICS. Scientific Papers of the Third International Congress of Eugenics, held at American Museum of Natural History, New York, August 21-23, 1932. 8vo. 531 pages. Baltimore, The Williams & Wilkins Co., 1934. Cloth, \$6.00.

This volume contains the scientific papers presented at the Third International Congress of Eugenics held in New York City in August, 1932. These papers mark the advance made in the field of eugenics, between the meeting of the Second International Congress of Eugenics in 1921, and the Third Congress in 1932.

The authors of the papers come from America and from the various countries of Europe, and a large number of subjects relating to eugenics are thoroughly discussed. All of the papers in the volume are interesting, and some are fascinating.

During the last few years the importance of eugenics has become recognized more and more by thoughtful leaders. All those who are interested in the future of the

human race should read this book and learn of the advances made in this science during the past few years.

WM. SIDNEY SMITH.

Surgical Clinics of North America, Feb. to Aug., 1934
THE SURGICAL CLINICS OF NORTH AMERICA. Volume 14, No. 1. (Philadelphia Number. February, 1934.) Issued serially, one number every other month by the W. B. Saunders Company, Philadelphia & London. Per Clinic year (6 nos.) Paper, \$12.00, Cloth, \$16.00.

This issue comes from Philadelphia and the first clinic is that of Drs. Eliason and McLaughlin, and is an excellent one on a most important topic—Postoperative Atelectasis. Each case is carefully studied and excellent scientific conclusions can be drawn from this clinic.

Dr. Babcock has an excellent clinic on Toxic Goiter with Routine Surgical Treatment.

Dr. Ravdin has a very practical and interesting clinic on Drainage of the Common Bile Duct and Carcinoma of the Male Breast.

Another very practical and constructive clinic is that of Dr. William John Ryan on Diagnosis and Differential Diagnosis of Diseases of the Gallbladder.

These clinics, together with the others in this volume, make Number 1 of 1934, outstanding.

The Second Number of the 1934 volume, comes from New York, and gives a rather wide range of unusual cases, with a few practical clinics, notably among which is one by Dr. Edward L. Keyes on Prostatic Retention of Urine and its Management.

Dr. George Woolsey discusses, very interestingly Gastro-Enterostomy in the Treatment of Peptic and Duodenal Ulcer. His conclusions are very sound and are certainly worth considering in these gastrectomy days. There are other clinics upon this same subject, by Dr. Hinton and Dr. Donovan, in which the subject is discussed from a somewhat different point of view, Dr. Hinton leaning definitely toward the more radical procedure, Dr. Donovan making a plea for more conservatism.

The subject of Acute Diffuse Peritonitis Following

Volume 14, No. 1. (Philadelphia Number.) February, 1934.
Volume 14, No. 2. (New York Number.) April, 1934.

Acute Appendicitis is discussed in a very practical manner by Dr. Philip C. Potter.

Dr. Lillian K. P. Farrar gives an excellent Analysis of the Gynecological Deaths at the Woman's Hospital, and makes a plea for this type of analysis yearly in all hospitals.

This number is up to the usual New York standard.

This Third Number comes from the Mayo clinic and contains an excellent clinic on the Palliative Treatment for Carcinoma of the Stomach, by Dr. Donald C. Balfour. He reports five cases which would certainly favor this treatment in a selected group.

Dr. Melvin S. Henderson has a very interesting clinic on the Semilunar Cartilages of the Knee.

Dr. Harold I. Lillie discusses in a very interesting manner, Acute Hemorrhagic Mastoiditis with Thrombophlebitis and Sepsis.

Dr. Winchell Craig discusses Clinical Application of Presacral Nerve Resection and gives a very scientific study on this interesting subject.

This is Number 4, and comes from Chicago. It begins with a Symposium on Plastic Surgery in which Burn Contractures of the Axilla are discussed by Dr. Sumner L. Koch.

Plastic Reconstruction of the Fingers by Transplantation of the Toes—an unusual and effective procedure—is described by Drs. Carl and William Beck.

The remainder of this number contains some very practical clinics on Hernia by Dr. Edmund Andrews; Early Signs and Symptoms of Brain Tumor, by Dr. Paul C. Bucy; Parathyroidism with Multiple Areas of Cystic Bone Change, by Dr. Kellogg Speed. The number is completed by a Symposium on Peptic Ulcer, Dr. Bevan discussing the Pathological Anatomy and Surgical Management; Dr. Ralph C. Brown, Principles of Medical Treatment and Dr. Cassie B. Rose, Roentgenological Aspects.

This is a very practical and outstanding number of the 1934 clinics.

HERBERT T. WIKLE.

Brain Tumors

BENIGN, ENCAPSULATED TUMORS IN THE LATERAL VENTRICLES OF THE BRAIN. Diagnosis and Treatment. By Walter E. Dandy, M.D. 8vo. 189 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1934. Cloth, \$4.50.

A well-illustrated monograph presenting in detail the case histories of fifteen benign encapsulated tumors occurring within the lateral ventricles of the brain. Also a short description of nine small benign symptomless tumors arising from the choroid plexus and a brief consideration of the malignant form of intraventricular (lateral) tumors. Twenty-five cases of lateral ventricle tumors, benign encapsulated type, were collected from literature, twenty-three of these being autopsy specimens.

The tumors in the author's series of fifteen cases were found at operation and fourteen were totally removed. Twelve patients recovered and three died. The history, physical findings, ventriculographic interpretation, and the operative procedure are, in each instance, clearly discussed, the histology of the tumors, however, receiving rather limited consideration. The author was unable to establish a symptom complex that would lead to a clinical diagnosis of a tumor within the lateral ventricle of the brain, the ventriculographic findings being the only conclusive, although adequate evidence, that the suspected brain tumor lay within one of these cavities.

JEFFERSON BROWDER.

The Circulation for the Non-Medical Reader

THE CIRCULATION OF THE BLOOD. By Winifred Parsons, M.A. 12mo. 204 pages, illustrated. New York, The Macmillan Company, 1934. Cloth, \$1.75.

A splendidly written book of 200 pages, in which the reader is carried logically through a presentation of anatomic and physiologic facts relating to the circulation, beginning with that of the humble earth-worm.

The English is a joy, and the subject matter such that, although intended for the non-medical reader, a physician might read with pleasure and profit.

There are special chapters on electric currents of the

Vol. 14, No. 3. (Mayo Clinic Number.) June, 1934.

Vol. 14, No. 4. (Chicago Number.) August, 1934.

heart and the history of the circulation.

FRANK BETHEL CROSS.

Dietetics for Nurses

NUTRITION AND DIET THERAPY. A Textbook of Dietetics. By Fairfax T. Proudfit. Sixth Edition, revised. 8vo. 833 pages, illustrated. New York, The Macmillan Company, 1934. Cloth, \$3.00.

This book is intended by the author as a text for nurses during a course in nutrition and diet therapy. One finds in this recently revised edition new chapters bringing the book up to date with the latest theories of the principles of nutrition, and the place of diet in treating disease. It also contains groups of questions which should prove of value for reviewing an individual's store of dietetic knowledge.

It covers all the elements of nutrition thoroughly as well as devoting individual chapters to each group of diseases that are influenced by diet therapy. It is well organized, follows a most logical sequence of thought, and is complete in its general scope as well as the details. This book is successful in its intent to give the reader the relationship between the diet prescription and the condition of the patient.

We recommend this book as an excellent manual for nurses. With the prominent place that diet in the treatment of disease is being given among the medical profession, this book is of value as a general reference of elementary dietetics for the general practitioner.

MORRIS ANT.

Body Mechanics in Chronic Disease

BODY MECHANICS IN THE STUDY AND TREATMENT OF DISEASE. By Joel E. Goldthwait, M.D. et al. Philadelphia. J. B. Lippincott Co., 1934. 8mo. 281 pages, illustrated. Cloth, \$4.00.

This volume carries a really important message to all clinicians because it adds a new note of encouragement regarding the restoration of health in many chronic ailments. In a clear and convincing manner the adverse effects of faulty posture on function of the body as a whole, and of various viscera in particular, together with the effect of such disturbed relationships or function to chronic disease, is explained.

The principles laid down have been tried for years, so they are not new, nor are the authors speculating on a theory. They present facts, substantiated by illustrative case histories, and the results in even such hopeless lesions as multiple sclerosis and paralysis agitans are remarkable. A whole chapter is devoted to the beneficial effects of improved posture on the arthritic.

Goldthwait has been father to this thought. The sincerity of his efforts and the beneficial character of the results are known to many. They are obtained by corrective exercises easily demonstrated in one's office and carried out by the patient in the home with little, if any, difficulty, there being no need for special apparatus. The aim is not to make bigger and better muscles, but emphasis is placed upon improved expansion of the chest, greater diaphragmatic excursion, and correct use of the abdominal muscles. A thorough understanding of the principles laid down in this book will be invaluable to the physician. They are so simple as not to be impressive on the first reading, but when put into practice they do produce results, which, after all, is the sine qua non of any type of therapy.

D. E. McKenna.

Gynecology for the General Practitioner

THE TREATMENT OF COMMON FEMALE AILMENTS. By Frederick John McCann, M.D. Third Edition. Baltimore, William Wood & Co., 1934. 8mo. 379 pages. Cloth, \$4.75.

An interesting book because it is decidedly different. The author attaches great importance to backward displacements of the uterus: "All known methods of contraception are harmful to the female; they differ only in being more or less so"; and from his own apparently large clinical experience McCann is satisfied that this is so. Discussing the relation of erotic excitement to dysmenorrhea, the author states that a "uterus profusely shedding tears of blood in its sexual agony is frequently relieved by massage." The book is easily read, because smoothly written, and of considerable interest to the specialist.

CHARLES A. GORDON.

Russia, Psychologically Considered

RUSSIA, YOUTH, AND THE PRESENT-DAY WORLD. Further Studies in Mental Hygiene. By Frankwood E. Williams, M.D. New York, Farrar & Rinehart, Inc. [c. 1934]. 8mo. 270 pages, illustrated. Cloth, \$2.50.

This is a collection of chapters which were originally separate articles for magazines. It is easy to see, however, that the stream of articles was a progressive clarification of Williams' own mind along a unified path. It is difficult to recall a book which packs more punch. The book is the revelation of a man in process of becoming. It deals with the most elemental aspects of the mind: man's attitude towards the world. Williams has passed beyond the confines of the physician.

There are three sides to Williams as revealed in the book which stand out sharply. Of course, the author presents one of the most basic and appealing representations on Russia which have been written. He shows what the idea of Russia is all about and it is humanly true. But, beyond this, Williams has outlined an indictment of our own Western civilization while defending Russia. He pursues the chastisement on a psychological basis and yet, he has lost the point of it all. Modern civilization is no more the work of capitalists than of laborers. We are all slaves in the system, because the system is the outgrowth of man's own strivings, conflicts and repressions. Russia, psychologically speaking, is the breakdown and aftermath of a psychic conflict. Secondly, Williams apparently is going through a personal transformation which generally takes place in college. Of course, it is no less sincere and, because it is the growth of an adult, it is doubtless that much more enduring.

The book is unreservedly recommended to every physician who can get hold of it. Together with the many thoughts about economic enslavement going through his head, this reading ought to form intellectual dynamite.

SAM PARKER.

The Founder of Mesmerism

FRANZ ANTON MESMER. A History of Mesmerism. By Margaret Goldsmith. Garden City, Doubleday, Doran & Co., 1934. 8mo. 307 pages.

The author has written biographies of Hindenburg, Frederick the Great, and Christina of Sweden. She apparently is adept in portraying historical figures in a manner that should appeal to the general public. In her biography of Mesmer, she has painted a picture of a struggling physician who finally attracts the attention of the world by treating hysterical patients by a method which now bears his name. She pictures him as a man of unusual culture, intelligence and education, and one who aroused the envy and, therefore, the antagonism of his fellow practitioners in medicine. She apparently has keen knowledge of the various groups of faith healers. She discusses freely the various schools of mental healing and even describes Christian Science, which was founded by Mrs. Eddy.

Of course, it is obvious that Mesmerism, as practiced by Dr. Mesmer, was effective in hysteria and the secret of his success lay in what psychologists would describe as transference.

IRVING J. SANDS.

Nutrition in Its Relation to Body Form

IDEALE KÖRPERFORM UND ERNÄHRUNG. By Dr. Carl E. Hartmann. 8vo. 111 pages, illustrated. München, Otto Gmelin, 1934. Paper, Mk. 2.70.

The author's reason for writing is found in the foreword, in which he says that he feels it warrantable because of the obscure and often incorrect exposition of the most important facts in the teachings of human nutrition and the relations between nutrition and the "body-form." The first 47 pages are devoted to a rather interesting discussion on the form of the human body, in which he dwells on inheritance, milieu, and constitution; the glands of internal secretion in relation to body-form; harmful environment and how to combat it; exercise and its effect on the body; the ideal body-form and its development. The remainder of the book is devoted to nutrition and its influence on "body-form," in which the author describes in simple and attractive manner the purpose of nutrition and the various types of nutrient ma-

terial and the manner of its appropriation by the body. On the whole the book is very readable and useful in view of its great simplicity. There are some interesting comments on Hitler and his ambition to produce a strong German people. The book is no "short-cut" to knowledge, but a brief statement of some of the modern concepts of the subject in a form easily grasped even by many of the laity.

J. M. VAN COTT.

A Pharmacist Tells About Kentucky Mountaineers

OUR WILLIE. By John Uri Lloyd. 8vo. 375 pages, illustrated. Cincinnati, John G. Kidd & Son, Inc. [c. 1934]. Cloth, \$2.50.

"Our Willie" is a folklore story of the Gunpowder Creek and Hills of Boone County, Kentucky. Its author, an elderly gentleman of eighty-five, has won the affection of these rugged mountaineers through prolonged contact with them, and through previous literary efforts in their behalf.

The book reads much like a Will Rogers picture. Its characters include, among others, rugged and illiterate toilers, and a lovable country judge. It has pathos, humor, and thrills.

EMANUEL KRIMSKY.

For Laymen

THE HUMAN MACHINE. Its Uses and Abuses. By Lorena M. Breed, M.D. Boston, The Stratford Company Publishers, [c. 1934]. 101 pages. 12mo. Cloth, \$1.50.

This little work consists of 100 pages of well written material which takes in the Anatomy and Physiology of the human body and written in such a way that it can be read and appreciated by the patient.

However, some of the terms and explanations here and there may be beyond the comprehension of the less literate individual. This book is one that a physician can recommend to his patients for home reading.

The style and content will not lead to self diagnosis and self medication.

SAMUEL ZWERLING.

The "Beauty Racket" Exposed

SKIN DEEP. The Truth About Beauty Aids—Safe and Harmful. By M. C. Phillips, of Consumers' Research. New York. The Vanguard Press [c. 1934]. 8vo. 254 pages. Cloth, \$2.00.

"Skin Deep," a rather interesting and timely book, deals with matters which concern practically every woman who uses "make-up," and though written by a layman, and for the layman, should also interest the physician. It discusses in simple language a great many of the advertised cosmetics as powders, creams, nail, eyelash, hair and sunburn preparations, lipsticks, rouges, astringents, deodorants, depilatories, soaps, etc. The author also has chapters on reducing preparations, cosmetic advertising, dietary fads, and revision of the present Food and Drugs Act.

Throughout the entire book, the author shows that in practically all of these advertised articles, "the prices charged are exorbitant, the claims extravagant, and the value dubious." She fearlessly and frankly mentions the names of these cosmetic products, and in many instances also the manufacturers. The author gives the composition of many of these cosmetics, as was determined either by the American Medical Association, the Consumers' Research, or other reliable authorities. Not only does she stress the utter uselessness of a majority of these preparations, but also warns of the dangers following the applications of many of them. In some instances she picks and recommends the best of these cosmetics, and at other times, she suggests simple formulas or remedies to take their place.

A section of "Skin Deep" that could be criticised from the medical point of view is the chapter on "Care of the Hair." Her statements on the cause of dandruff are entirely too general, and are applicable to any disease of any organ. For example she states that dandruff "is a symptom of unhygienic living habits, lack of sleep, the wrong diet, or excessive nerve strain." All this not only means nothing, but has no place in this book. A little further on in the same chapter, the author again outsteps the bounds of the book by attempts to recommend a treatment for dandruff. She advises a shampoo with tincture of green soap U.S.P. in the mild type, and under certain

other conditions, she states "you may use daily for a time a 2 per cent aqueous solution of resorcin." While it is true that the author advises that a physician should also be consulted, nevertheless, diagnosis and treatment of dandruff and other pathological conditions are out of the sphere of this book.

In general, however, the book is very well written and the layman, as well as the general physician, will be greatly benefited by a careful reading of "Skin Deep."

A. WALZER.

Geriatrics

OLD AGE MEDICALLY CONSIDERED. A Series of Papers by Medical Authorities on the Physical and Dietetic Treatment of Diseases and Disabilities of Old Age. With a foreword by R. King Brown, M.D. London, Actinic Press, Ltd., 1934. 8vo. 96 pages, illustrated. Paper, 3 shillings.

These short papers by British writers are reprinted from the British Journal of Physical Medicine. If you are interested in the following suggestions from its pages, read the book. Oral lesions are often due to light starvation and respond to general ultra-violet radiation. Multiple extractions in the aged are dangerous. Do not overlook mechanical obstruction in failing renal function. Chronic bronchitis is not an infection but primarily a respiratory vago-sympathetic syndrome, and can be controlled in suitable cases by specific exercises. Graduated exercises are important in convalescence from congestive heart failure. The keeping of a diary stimulates old people to do things worth recording. Finally, "Old people must not live in the past, but be taught to appreciate the present and the future, for therein lies their happiness."

TASKER HOWARD.

A Plan Book for Health Teachers

HEALTH WORKBOOK. An Orientation Course in Personal, Racial, Home and Community Hygiene for College Freshmen. By Kathleen Wilkinson Wooten, M.A. New York, A. S. Barnes & Co., 1934. 220 pages, illustrated. 4to. Paper, \$1.50.

Miss Wooten, who is Professor of Health and Physical Education at Georgia State College for Women, has prepared an excellent text-book for instructing students in matters of personal and community hygiene.

The book is intended for teachers in colleges giving courses in general education. It shows them in outline form and by reference to extended lists of books, how each topic should be presented to the class. These topics are treated in thirty-five chapters on personal hygiene with fifteen other chapters on subjects such as communicable diseases and their control, the child welfare movement, industrial health and public health problems.

The method of instruction should give to the student a comprehensive knowledge of health matters presented in an attractive and practical way quite in contrast with the usual didactic style.

A. E. SHIPLEY.

A New Edition of Tidy's Synopsis

A SYNOPSIS OF MEDICINE. By Henry Letheby Tidy, M.D. Sixth Edition, revised and enlarged. Baltimore, William Wood & Co., 1934. 1112 pages. 12mo. Cloth, \$6.00.

There are numerous changes in this edition. In Diseases of Deficiency, recent work on the Vitamins has made many changes necessary and Osteomalacia is now included in this section, instead of the Diseases of the Bones. The sections on Nephritis, Anaemia and the Endocrine Glands have been written and there are new articles on the Parathyroid Glands. Generalized Osteitis Fibrosa, Tetany and Calcium and Phosphorus Metabolism, normal and abnormal. New articles on such subjects as Hypoglycaemia, Anaemias of Pregnancy, Basophil Adenoma of the Pituitary Gland and Multiple Myelomatosis with numerous others bring the book up to date.

This is a very useful book giving the essential features of each disease, not too briefly, but without any unnecessary words and is most convenient for student and practitioner.

W. E. McCOLLOM.

Cancer Research

RESEARCHES IN CANCER: Part 1 [1896-1921; 1922-1932]. B. Caleb Wyand Geeting Rohrer, M.D. Baltimore. The Brentwood Printing Co., 1934. 8mo. 142 pages, illustrated. Cloth, \$5.00.

The author believes that cancer is due to embryonal

rests present at birth, and persisting through life, in individuals born *slightly prematurely*. He has prepared from still born foetal tissue a glycerinated suspension which he injects subcutaneously in 5 c. c. doses. He states that fatty degeneration of the tumor results.

Although he claims to have under treatment 200 cases, and to have cured 7, he does not cite a single case history, or offer any laboratory or microscopic proof to substantiate his assertion.

A life long habit of omnivorously reading biographies finds expression in his own venture into this field, to which he devotes half the book. He gives a complete biography of Cohnheim, of his revered teachers and, not to neglect his friends and associates, includes their autobiographies as well.

H. MANDELBAUM.

Surgery of the Sympathetic Nervous System

THE CLINICAL ASPECTS OF VISCERAL NEUROLOGY. With special reference to the surgery of the sympathetic nervous system. By W. K. Livingston, M.D. Springfield, Ill., Charles C. Thomas [c. 1935]. 4to. 254 pages, illustrated. Cloth, \$8.50.

A well organized and timely monograph condensing the accumulated knowledge of the anatomy and physiology of the "sympathetic nervous system" in a manner that is both easily understandable and clinically applicable. The several syndromes that may be amenable to "sympathetic surgery" are properly grouped and considered from a clinical standpoint. The results to be expected following the division of sympathetic nerve pathways supplying the diseased part are discussed. Case histories are used to supplement some of the arguments and to advantage, whereas in other instances they are conspicuous by their absence leaving a doubt in the reader's mind as to the extent of the author's personal experience. As a whole the monograph is comprehensive and sifts the wheat from the chaff in this most important surgical field.

JEFFERSON BROWDER.

BOOKS RECEIVED

Books received for review are acknowledged promptly in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

THE MODERN METHOD OF BIRTH CONTROL. By Thurston S. Welton, M.D. New York, Walter J. Black, Inc., [c. 1935]. 168 pages, illustrated. 12mo. Cloth, \$3.00.

1935 OFFICIAL HANDBOOK OF THE BRITISH HEALTH RESORTS ASSOCIATION. By R. Fortescue Fox, M.D. London, J. & A. Churchill, Ltd., [c. 1935]. 263 pages, illustrated. 8vo. Paper, 1s.

BARRY SCOTT, M.D. By Rhoda Traux. New York, E. P. Dutton & Company, [c. 1935]. 279 pages. 12mo. Cloth, \$2.50.

THE 1934 YEAR BOOK OF THE EYE, EAR, NOSE AND THROAT. Edited by E. V. L. Brown, M.D. and Louis Bothman, M.D.; Ear, Nose and Throat edited by George E. Shambaugh, M.D. and Elmer W. Hagens, M.D. Chicago, Year Book Publishers, [c. 1935]. 621 pages, illustrated. 12mo. Cloth, \$2.50.

THE 1934 YEAR BOOK OF DERMATOLOGY AND SYPHILIOLOGY. Edited by Fred Wise, M.D. and Marion B. Sulzberger, M.D. Chicago Year Book Publishers, [c. 1935]. 704 pages, illustrated. 12mo. Cloth, \$3.00.

IDEAL HEALTH OR THE LAWS OF LIFE AND HEALTH. By Alexander Bryce, M.D. Third edition. Baltimore, William Wood & Company, [c. 1935]. 340 pages, illustrated. 12mo. Cloth, \$2.00.

DISEASES OF THE RECTUM AND COLON AND THEIR SURGICAL TREATMENT. By J. P. Lockhart-Mummery, F.R.C.S. Eng. Second edition. Baltimore, Williams & Wilkins Company, [c. 1934]. 605 pages, illustrated. 8vo. Cloth, \$10.00.

SURGICAL DISEASES OF THE CHEST. By Everts A. Graham, M.D., Jacob J. Singer, M.D. and Harry C. Ballou, M.D. Philadelphia, Lea & Febiger, [c. 1935]. 1070 pages, illustrated. 4to. Cloth, \$15.00.

I KNEW 3000 LUNATICS. By Victor R. Small, M.D. New York, Farrar & Rinehart, Inc., [c. 1935]. 273 pages. 8vo. Cloth, \$2.50.

NUTRITION. By Margaret S. Chaney, Ph.D. and Margaret Aborn, M.S. Boston, Houghton Mifflin Company, [c. 1934]. 436 pages, illustrated. 8vo. Cloth, \$3.00.

PHYSIOLOGIE UND PATHOLOGIE DER WEHEN. By Dr. Tasilo Antoine. Wien, Wilhelm Maudrich, [c. 1935]. 50 pages. 8vo. Paper, RM4.

DIE HAUT-UND GESCHLECHTSKRANKHEITEN. By Prof. Dr. Leopold Arzt and Prof. Dr. Karl Zieler. Lfg. 21/22. Berlin, Urban & Schwarzenberg, [c. 1935]. 540 pages, illustrated. 4to. Paper, RM16.

VITAMINS AND YOUR HEALTH. By Margaret E. Gauger, Ph.D. New York, Robert M. McBride & Company, [c. 1935]. 102 pages. 12mo. Cloth, \$1.25.

DOCTORS AND JURIES. By Humphreys Springstun. Philadelphia, P. Blakiston's Son & Co., Inc., [c. 1935]. 155 pages. 12mo. Cloth, \$2.00.